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PAPER TRADE JOURNAL

VOL. 123, NO. 2 JULY 11, 1946

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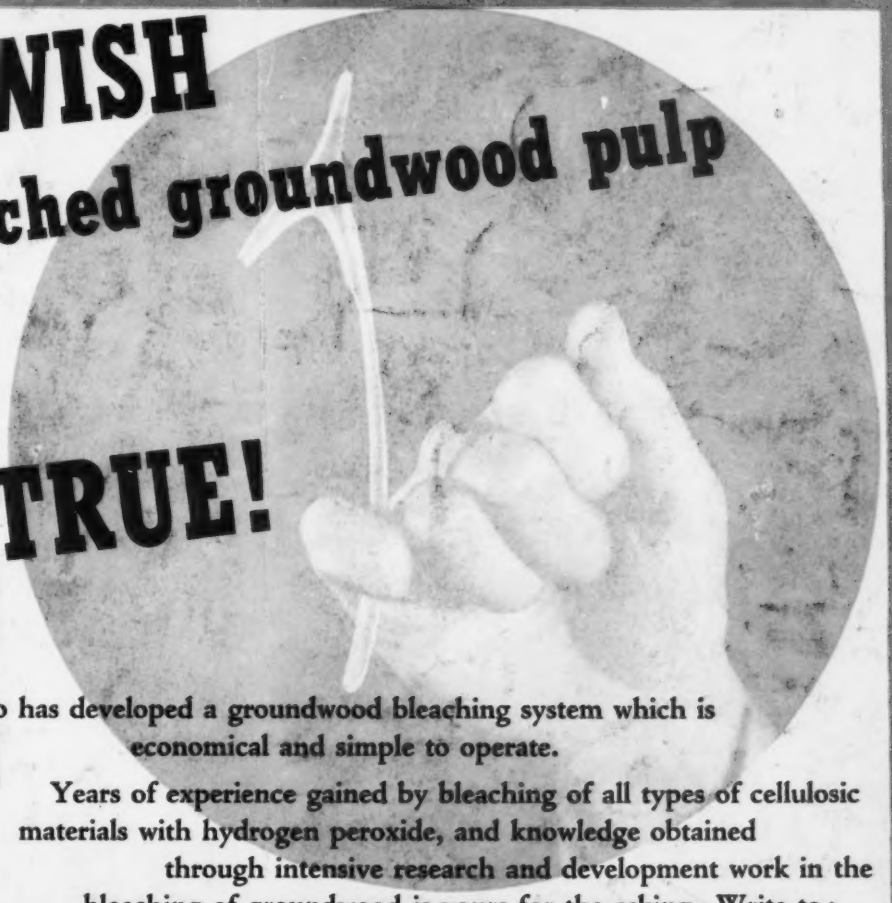

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Hudson Valley Mills Running at Full Schedule
Midwest Trade Bides Time on Price Raises
NPTA Shifts Meeting Date to Oct. 17-19
Rossiter Heads Southern Paperboard

Holyoke Mills Study New Price Requirements
Materials Shortage Threatens Box Board
Wisconsin Reservoirs 92 Per Cent Filled
National Gypsum Buys Western Board

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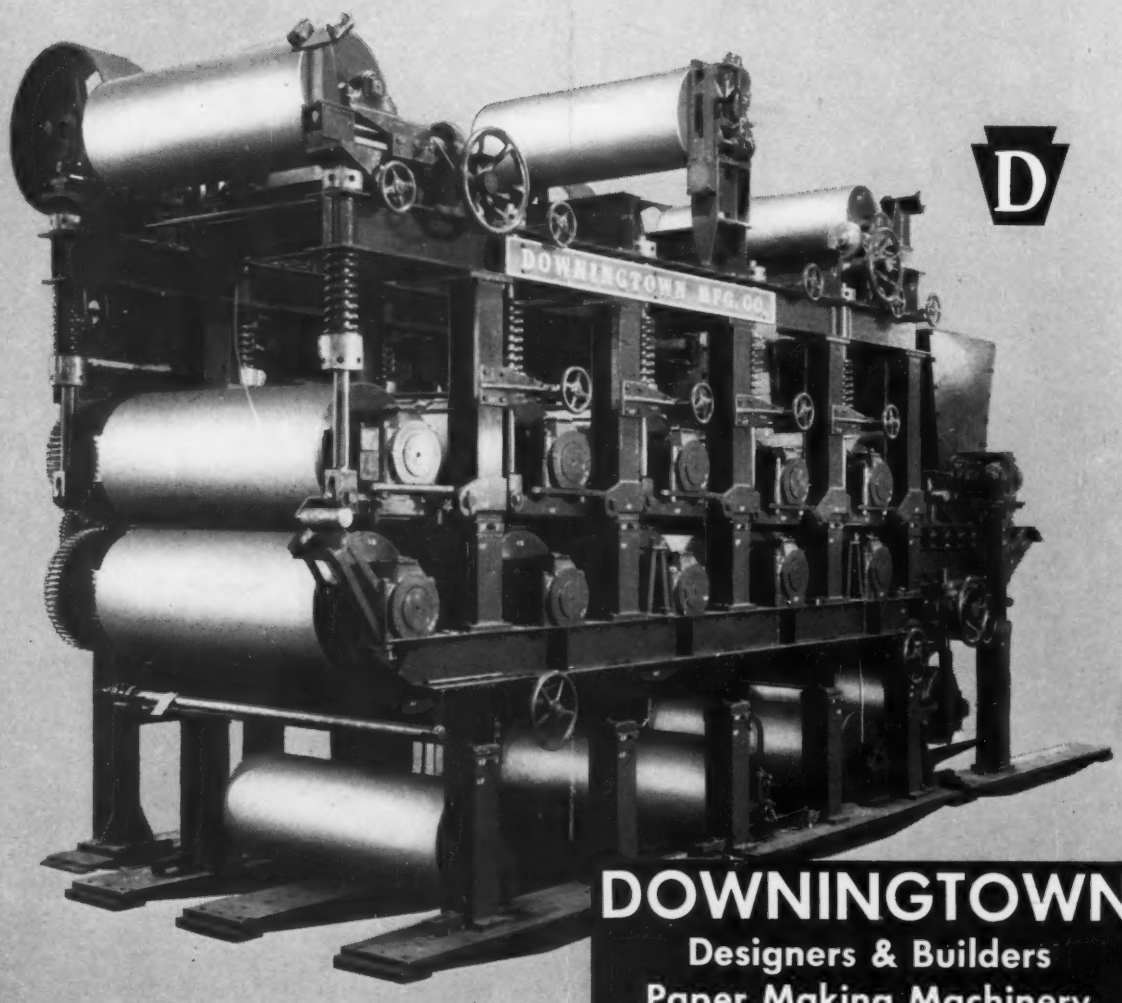
When "grain alcohol" is made from wood, the Downingtown Lignin Press makes the recovery system efficient. If you have a difficult pressing problem, see us . . . Downingtown Manufacturing Co., Downingtown, Pa.



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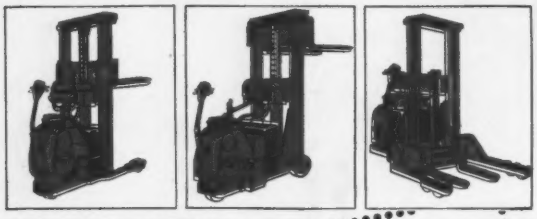
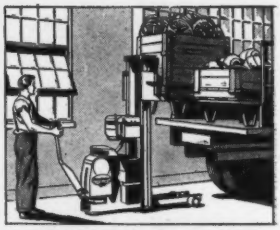


FINGER TIP CONTROLS LOAD

Cartons, crated goods, hard-to-handle material—one man or girl hauls, lifts and stacks to full storage heights.



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Pick up merchandise from ground level and deposit it on truck or trailer. A three-man operation becomes a one-man operation.

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1. Cuts loading and unloading time in half.
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6. Lifts and stacks product from ground level to trucks and trailers.

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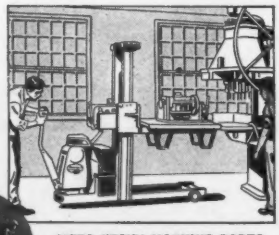
Transtacker — A PRODUCT OF AUTOMATIC — Lightens LIFE'S LOADS



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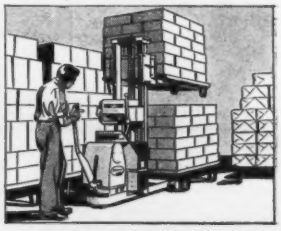
When heavy machine parts must be lifted to working height, let Transtacker safely lift it and place it.



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( ) Have an A.T.C. Specialist call and survey my material handling costs.

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By.....*Position*.....

Street Address.....

City.....*State*.....

PAPER TRADE JOURNAL

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PYRIDOSE* economically and positively controls slime... one ounce of Pyridose treats ten to fifteen tons (dry weight) of pulp.

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For convenient application, one full ounce of Pyridose comes in a handy, economical paper packet to be thrown unopened into the beaters or refiners. This avoids handling bulk chemicals... no mess or waste with Pyridose.

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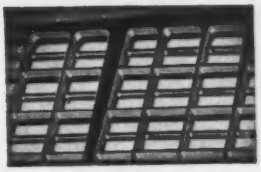

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Kathanode equipped electric industrial trucks have the punch necessary to meet unusual conditions. They will climb ramps, and have the extra power to operate hoists while the vehicle is still in motion.

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The Gould Kathanode grid has double-wedge shaped members that securely hold the active material, yet expose only a knife-like edge to surface erosion. Grids are tapered at the top for extra conductivity thus delivering more power at the terminals.

This grid is an exclusive Kathanode feature that provides more power and longer life. For all the facts write Dept. 57 for Catalog 100 on Gould Kathanode Batteries for Industrial Truck and Tractor Service.

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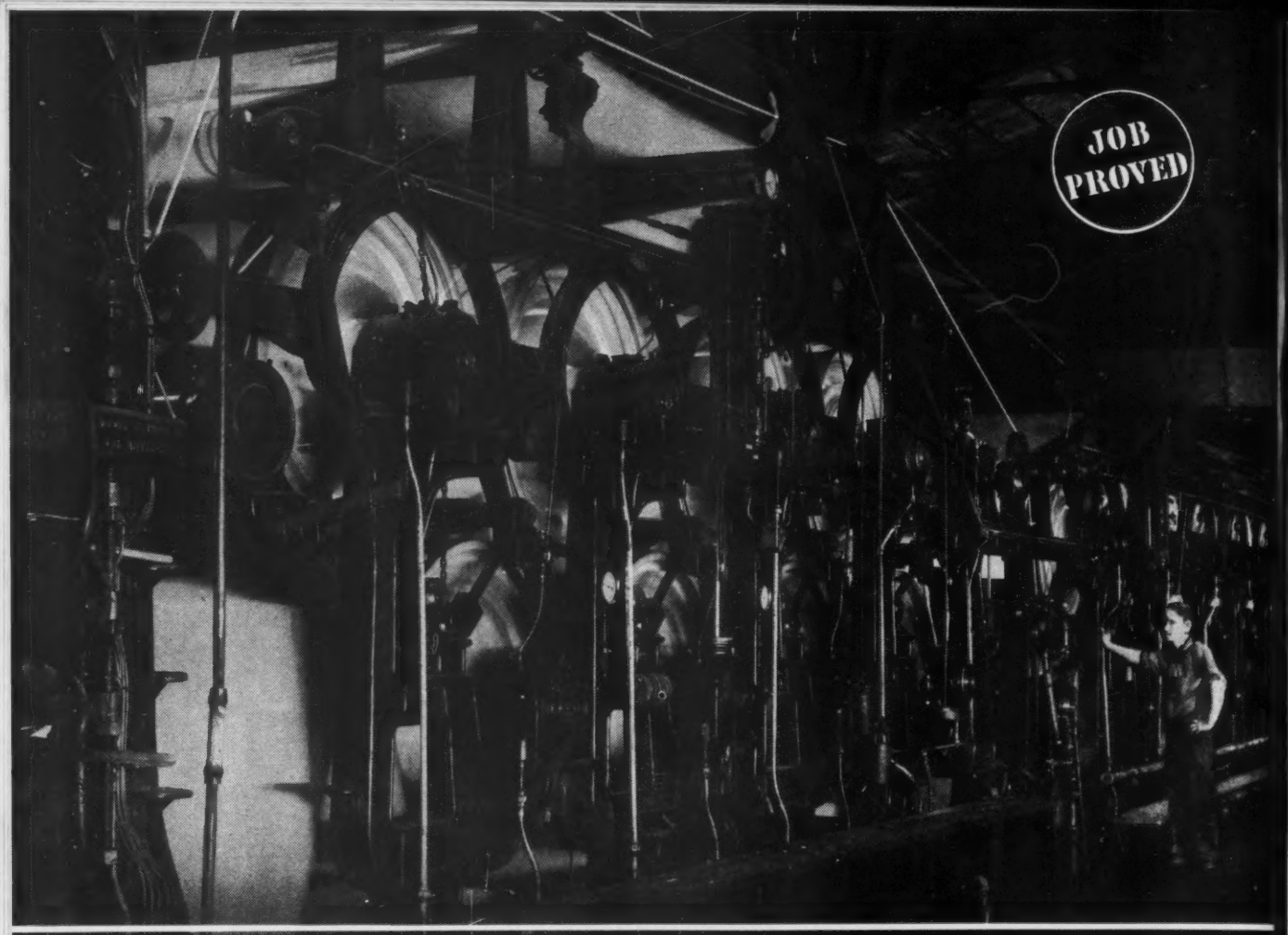

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Put an End to Clogged Bearings, Overflowing Oil, Spotted Webs

A well-known paper mill tried two different types of oil without success, and then solved the problem by calling a Sun Engineer, who recommended the correct "Job-Proved" Sun oil.

The first oil carbonized in the bearings, clogged the return leads, overflowed, and damaged paper.

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With the "Job-Proved" Sun oil everything changed for the better. Oil consumption is now cut in half. Bearings stay free from carbon. The machine is cleaner. There is no spoilage caused by dripping oil.

Call the Sun man near you for facts on Sun paper mill lubricants that are doing jobs like this every day. Sun's "Job-Proved" products eliminate unexpected shutdowns, speed up production, improve paper quality.

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PAPER TRADE JOURNAL

Vol. 123, No. 2 July 11, 1946

Title Reg. U. S. Pat. Off.

Midwest Trade Bides Time on Increases

CHICAGO—Local market students did not expect the absence of price control to have any immediate effect on paper prices in the area and, to date, the market has shown no evidence of any skyrocketing. There was, of course, a great deal of concern over the possibility that some OPA extension might include a retroactive feature and there was also a sincere desire evident to show that the industry itself could retain a fair price structure without control.

Even so, it was reported in several instances, that certain prices would be readjusted upward somewhat in line with OPA policies which had not as yet been put into effect. These readjustments were expected to come where the absorption policy had been construed as far too severe and penalizing to production itself. However, cases where other than moderate increase would come were expected to be the exception rather than the rule.

Chicago paper trade leaders interviewed expressed the belief that the current "probationary" period provided the trade with a glowing opportunity to demonstrate its leadership qualities and the possibility of abandoning price control entirely. It was felt here that such abandonment might possibly come if the Congress had demonstrated to its satisfaction that the economy was ready to get back on a peace time basis with price resuming its normal functions.

The waste paper market showed little disposition to move anywhere, according to reports, as the trade awaited further clarification of the most startling and unexpected situation.

Wholesale Volume Up 21 Per Cent

WASHINGTON—Wholesalers' sales of paper and paper products totaled $40,071,000 for the first five months of this year, 21 percent above those for the corresponding 1945 period, according to the Bureau of Census based on figures of reporting firms.

Sales totaled $8,759,000 in May, ten pecent over April sales, and 41 percent higher than in May, 1945. Inventories gained two percent in May from April and were 25 percent above those for May last year, according to the report.

Hudson Valley Area Mills Running at Full Schedule

NPTA Shifts Date; To Meet Oct. 17-19

Executive officers of the National Paper Trade Association have decided to change the fall Convention dates previously announced for November 4-6 at the Palmer House. It was realized that this period included Election Day but it was thought that the difficulty could be met by absentee voting. However, since there are several states in which this is not permitted and in view of protests received, reconsideration seemed absolutely necessary to avoid a seeming disregard of the obligations of citizenship.

It has been decided to hold the meeting October 17-19 (Thursday to Saturday) with headquarters at the Edgewater Beach Hotel. Reservations may be made direct with the Edgewater Beach Hotel.

It has proved impossible at this hotel to arrange for a room exhibit. However, it is believed that manufacturers will be able to reserve rooms at the Edgewater Beach for the reception and entertainment of friends and customers attending the Convention.

Wisconsin Leads Nation In Tree Planting

MADISON, Wis.—Wisconsin planted more than three times as many forest trees last year as any other state in the Union, the United States Forest Service has announced. The Wisconsin Conservation Department's nurseries produced 13,000,000 trees last year for planting in all counties. The second highest forest tree producer was New York with 3,820,000. Other high producing states were Michigan, 3,768,000; Georgia, 3,407,000, and Pennsylvania, 3,533,000.

Jones Heads Envelope Assn.

CHICAGO—George W. Jones, Berlin and Jones, New York City, was elected president of the Envelope Manufacturers Association at that organization's annual meeting recently held in Chicago. He succeeds H. H. Reineman of the Rochester Envelope Company of New York.

COHOES, N. Y.—Paper mills in this section are no longer hampered by a scarcity of skilled help which during the war days assumed large proportions. A few are seeking help but the demand has diminished to a great extent. Returning soldiers have been given their old jobs in nearly all instances and the majority of mills are running with full quotas of workers. Among the mills still scouring the section for help are the Albany Felt Co. and F. C. Huyck & Sons, which have been running with day and night shifts for some time.

Labor troubles are practically nonexistent at this time and during the past few months wage increases have gone into effect in several mills. Among the recent increases is one of from six to ten cents an hour affecting several hundred employes at the Union Bag & Paper Co. This new wage contract extends until June 1, 1947, and brings the minimum wage for men to 77 cents an hour and for women to 65 cents. The new agreement calls for a forty-eight hour week in the Soutan factory and forty-six hour week in the bag plant with time and one-half for overtime.

Other new wage increases negotiated during recent weeks affect the mills of the West Virginia Pulp & Paper Co., the Book and Bond Division of the International Paper and Finch, Pruyn & Co.

Fourth Whiting Prepares To Enter Paper Mill

HOLYOKE, Mass.—William Whiting, Jr., son of Mr. and Mrs. William Whiting, is working this summer at the Whiting Paper Company. He is the fourth generation of his family to be associated with that famous paper mill. The Whiting Paper Company was founded by his great grandfather, the late Congressman William Whiting. His grandfather, the late Secretary of Commerce William F. Whiting, is president and secretary of the Whiting Paper Company.

William Jr. is a student at the University of Maine. He plans to enter the family industry after he finishes his education.

Rossiter Takes Helm At Southern Board

SAVANNAH, Ga.—With Ernest Rossiter, former head of the St. Lawrence Paper Company of Canada, and in recent years acting as an independent paper mill engineer, named president of the Southern Paperboard Corporation which will erect a $9,000,000 pulp and paper mill at Port Wentworth the way is cleared to start building on the project. George E. Dyke, president of the Robert Gair Company, Inc., was named chairman of the board.

Other officers elected were: T. Raymond Pierce, vice-president and forester; E. O. Sommer, comptroller; E. Meyer, treasurer; W. F. Howell, secretary; William Bergman, assistant comptroller; A. J. Bauser, assistant treasurer; R. B. Trotman, assistant secretary.

Southern Paperboard is preparing to award contracts for the construction of the huge paper mill which will have a production of 450 tons and give employment to hundreds of Savannahians. Mr. Rossiter, the new president of Southern Paperboard, was commissioned by Gair to locate and develop all plans for the new mill at Port Wentworth. He has worked in close cooperation with city and county officials. Some years ago Mr. Rossiter spent a few weeks in the Herty laboratory here and arranged for a Canadian mill to make the first commercial run of newsprint from Southern pine.

Oberreich and Meyer Advance In Kimberly Organzation

NEENAH, Wis.—Promotions at the Kimberly-Clark main office have advanced Karl Oberreich to be assistant general purchasing agent, and William Meyer to be assistant to Lawrence Stedman, head of paper sales.

Mr. Oberreich came to Kimberly-Clark from Ripon College, with a major in chemistry in 1930. He first worked in the main laboratory and Kimberly research, then went to the technical department at Atlas where he remained until 1937 when he came to the purchasing department. Until his recent appointment, he was a buyer in charge of raw and finishing materials.

Mr. Meyer, a graduate of Lawrence College, came to Kimberly-Clark in January, 1935. His first two years were spent at Niagara Falls, where he worked in the manufacturing department. He came to Neenah in 1937, after transferring to the standard costs department.

BenMont Buys Adams Control

BENNINGTON, Vt.—BenMont Paper Corporation has bought the controlling interest in the Adams Paper Company at Wells River, Vt. BenMont, which produces wax paper, gift wrappings and paper draperies, has been buying a substantial part of the Adams Paper Company's production of high grade tissue paper used widely in the jewelry trade and as gift wrappings. The purchase was announced by D. C. Hurlbut, BenMont president.

Massey Retires from the H. P. Smith Organization

CHICAGO—P. J. Massey, vice-president of the H. P. Smith Paper Company, has retired as of June 30. Mr. Massey will, however, remain on the Board of Directors of the company and will be available in an advisory capacity.

He joined the Smith organization in 1940 and during the period of Mr. Sherman's absence in the armed forces, acted as general manager of the firm.

During the war period, when Mr. Massey was in charge of all activities of the Smith company, many new items were developed and the company's business expanded several times. Mr. Massey gets complete credit for these results as he performed under the most trying of conditions.

In addition to his work with the Smith organization, Mr. Massey was a consultant at the Quartermaster Corps Subsistence and Research Laboratory, served on the Ordnance Wrap Committee, the Bearing Wrapping Committee of the S.A.E., and did considerable research and development in devising corrosion and greaseproof tests for bearing wraps. He also served on the War Production Board and Office of Price Administration Industry Advisory Committees and was chairman of the Industrial Relations Committee of the Waxed Paper Institute.

Kimberly-Clark Promotes Keck And Others at Chicago

NEENAH, Wis.—D. H. Keck has been appointed district representative to be in charge of all sales at the Kimberly-Clark corporation's middle-west headquarters in Chicago. S. B. Fithian has been named to succeed Mr. Keck as district manager of paper sales, and E. T. Hittson, Jr., to replace Fithian as assistant district manager of paper sales.

Personnel-wise, the corporation's sales department has just completed its first postwar training program and, according to C. F. Jenkins, general sales manager, further sales training programs and refresher courses are planned on a continuing basis to keep pace with increased product and manufacturing developments.

Gypsusm Elects Corrie Treasurer

BUFFALO, N. Y.—Walter S. Corrie has been elected treasurer of the National Gypsum Company. Mr. Corrie succeeds Frank E. Davis, who continues as secretary. Mr. Corrie joined National Gypsum in 1928. He was an auditor, then assistant treasurer and later controller.

CPA Eases Newsprint Inventory Status

WASHINGTON, D. C.—The inventory regulation of newsprint has been changed from a specific number of days to a minimum practicable working inventory by the Civilian Production Administration. At the same time, CPA said that import controls on all newsprint were lifted, effective July 1.

A spokesman explained that "the newsprint manufacturer's facilities are so geared that his production is approximately the same each month. Having no storage facilities, in most cases, he must ship his output as soon as manufactured. Publishers, however, and other users of newsprint curtail their use during the summer months of July, August and September to use the paper so saved in the heavy-use months of October, November and December. Consequently, coupled with increased production, a fixed and rigid number of days' inventory is no longer practicable, but the inventory that pertains to most other materials is substituted—namely a minimum workable inventory."

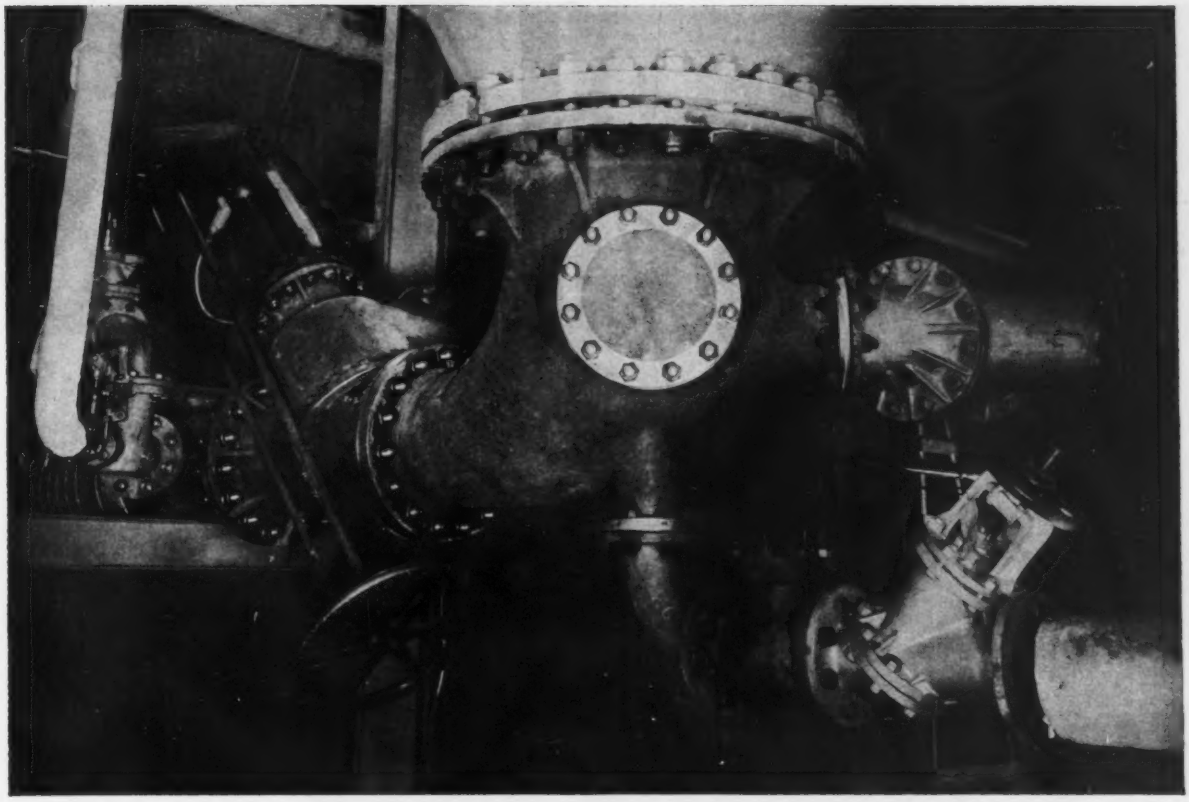
When the restrictions on the use of newsprint were lifted December 31, 1945, it was done only after assurance by the Special Newsprint Committee of the American Newspaper Publishers Association and definite action by the State and Regional Newspaper Publishers Associations that no legitimate newspaper of any kind, size or description would be allowed to suspend for lack of newsprint. They approved the so-called New England plan for assisting fellow publishers. This program still stands and is counted upon by CPA to correct any hardship cases.

"Another reason for the revocation," the statement continued, "is the change in conditions affecting water-borne shipments. During the war, publishers and other users of newsprint who received newsprint by water were required to reduce their inventories on May 1 of each year to 30 days if they were in Class A states, or to 50 days if they were in Class B states.

"Mills which are icebound during the winter must have special storage facilities for their production and must ship all their newsprint during the months when water navigation is open. During the war, water shipments were generally limited to mills which were completely icebound during a large part of the year. With the return of more normal shipping conditions and shipping rates more newsprint is moving by water. It is expected that water shipments of newsprint will soon become normal, that is one-third by water and two-thirds by rail."

Lawrence Bloom Back on Job

BOSTON—Lawrence Bloom, formerly a corporal, just out of the service in the Army after serving four years, son of Jacob Bloom, has become general manager of J. Bloom & Company.



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for less maintenance and better color...

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The answer is *ESCO* stainless steel blow fittings and blow valves. They are built to resist corrosion, heat, pressure, abrasion, shock and vibration. In doing this they reduce shutdowns and maintenance costs to a minimum, assure cleaner, whiter pulp.

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Both are cast in *ESCO* alloy 45 stainless steel. The blow valves and fittings are accurately machined, hydrostatically tested and rigidly inspected.

It will be profitable for you to get complete data on *ESCO* blow fittings and blow valves as well as other *ESCO* stainless steel specialties for pulp mills. Ask your nearest *ESCO* representative or write us for information and for Bulletins 155 and 157.

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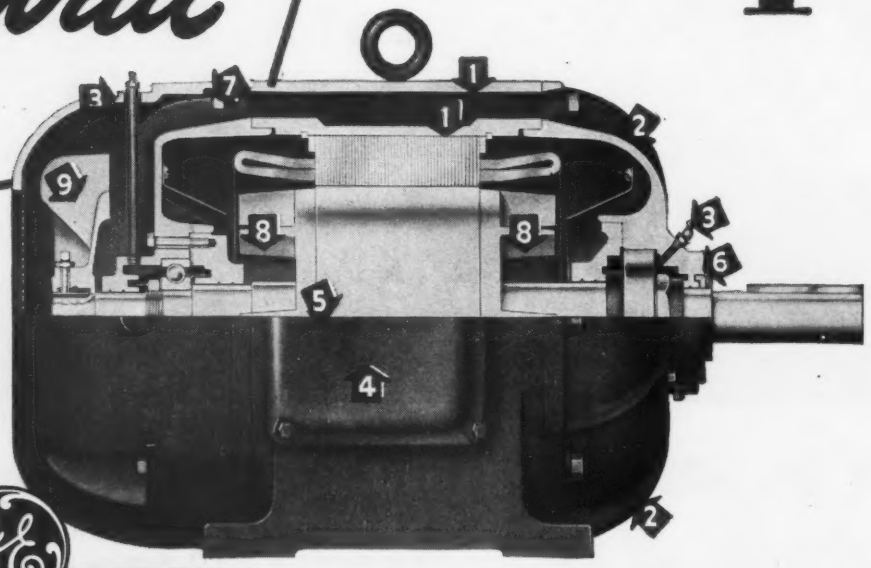
A Double Wall Keeps



TRI CLAD

TOTALLY ENCLOSED STANDARD and EXPLOSION-PROOF MOTORS

These 9 points of new strength and serviceability put this TRI CLAD totally enclosed motor way ahead.

1. A cast-iron, double-wall frame that completely encloses windings and punchings
2. Ribbed, cast-iron end shields, machined to provide a tight seal, yet easily removed
3. Well-proved, pressure-relief greasing system which can be packed with a long-life lubricant where advisable
4. Cast-iron conduit box diagonally split for wiring convenience (independently explosion-proof on explosion-proof motors)
5. Leads are sealed in a nonshrinking compound at the point where they emerge from the frame
6. Rotating labyrinth seal prevents infiltration of grit or liquids
7. Large, free-flowing, easy-to-clean air passages protect parts from accumulation of dust and foreign material
8. Modern "ageless" insulation treatment includes Formex* magnet wire
9. Powerful external fan is removable, simplifying maintenance (nonsparking type for explosion-proof motors)

AND IN ADDITION—compactness and short length promote ease of handling and installation

*Trade-mark reg. U.S. Pat. Off.

FOR THE COMPLETE STORY

Apparatus Department
General Electric Company
Schenectady 5, N. Y.

Please send me GEA-4400, which describes the new Tri-Clad totally enclosed motor.

Please send me GEA-4131, "Motors and Control for Hazardous Locations."

Name.....

Company.....

Address.....

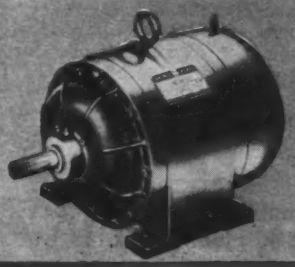
750-257-8030

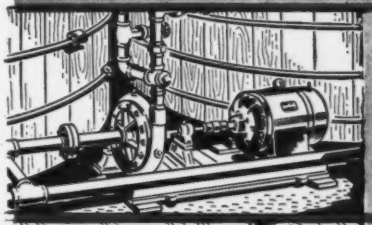
GENERAL ELECTRIC

Trouble Out

NEW TRI/CLAD TOTALLY ENCLOSED MOTOR IS MORE FULLY PROTECTED FROM DUST, DIRT, WEATHER, OR WHAT HAVE YOU...

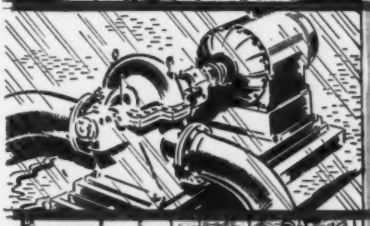
Now, General Electric has applied Tri-Clad construction to its line of totally enclosed induction motors (1 to 1000 hp) and to most of its explosion-proof motors as well. *Extra protection* has been raised another notch.





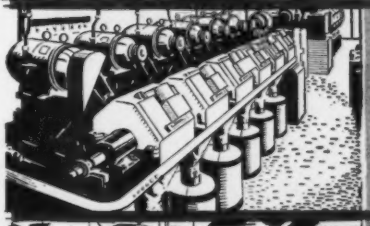
FOR EXTRA-SEVERE JOBS

Applications amid dust, metal filings, coolants, or corrosive agents—where totally enclosed motors have always been required—will now have the benefit of a stronger armor, plus convenience features that simplify installation and servicing.



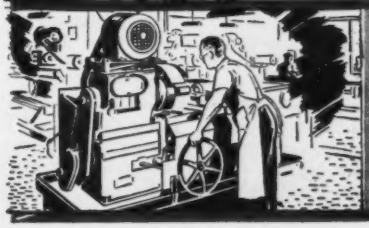
FOR EXTRA-WET LOCATIONS

Indoors or out, these Tri-Clad totally enclosed motors will take hosings or heavy rains without danger of shutdown. The cast-iron frame is strongly resistant to rust and corrosion.



FOR HAZARDOUS ATMOSPHERES

"Companion motors" to the standard Tri-Clad totally enclosed, the new explosion-proof and dust-explosion-proof types are tested and listed by Underwriters' Laboratories for Class I, Groups C and D, and Class II, Groups E, F, and G.



FOR EXTRA-LONG LIFE

Many motor users are making the totally enclosed motor their standard for *all* jobs—based on evidence of long-term savings. This new member of the Tri-Clad line makes this decision more logical than ever.

Holyoke Mills Study New Requirements

HOLYOKE, Mass.—Holyoke's fine paper industry, long neglected by OPA finds itself with a week and in some cases two weeks to look the free market over before increasing its prices. The Holyoke paper mills were closed down last week for vacation. Several were down for the first two weeks in July. There will be no shipments made out of the local plants during this holiday, so no price changes were made.

The OPA has kept the Holyoke paper mills on its 1941 price schedules, despite several pleas made both by local management and the labor organizations for price relief.

That the prices will rise after the Holyoke mills reopen is a foregone conclusion. Some of the paper manufacturing concerns here are threatened with deficits and will take advantage of the free market to get back into profitable operation.

Thomas H. Blodgett, president of the American Writing Paper Corporation warned his stockholders a few weeks ago that losses are threatened in the second quarter unless OPA granted price rises. OPA did not give the fine paper industry any relief.

Kimberly-Clark Adjusts to Basic 40-Hour Week

NEENAH, Wis.—Reconversion to a basic 40-hour work week, now in various stages of progress throughout the corporation, was broadened last week by Kimberly-Clark Corporation to cover all salaried personnel. Department heads and mill managers announced base salary increases on July 3 for a majority of personnel which will assist in maintaining traditional rate throughout the corporation.

The increase in base salaries became effective as of July 1 or on the date on which cutback in hours occurs. Wartime schedules ran from 44 to 48 hours. Some small variation in the 40-hour basic work week will be required, the industrial relations department said, but only as demanded by specific and essential operating conditions.

Wausau Section Closes for Holiday Vacations

WAUSAU, Wis. — Among plants closed last week for annual vacations were the Marathon mills at Rothschild, which gave its employes a 42-hour vacation over the "Fourth," except its office staffs, which were off only on Thursday. The sulphite, paper mill and other six-hour shift departments closed at noon July 3 and resumed operations at 6 o'clock Friday morning.

The Wausau Paper Mills Company at Brokaw was shut down Wednesday and Thursday.

Wausau Iron Works shut down for the entire week, to give its employes a vacation with pay. Employes with five years or more of service are entitled to an additional week, to be taken at their option. Marathon Foundry & Machine Company closed its foundry but continued operations at its machine shop. The same vacation arrangement prevails as at Wausau Iron.

Union Bag Starts Work On Gas Precipitator

SAVANNAH, Ga.—According to announcement by Resident Manager T. T. Dunn, construction has been started at the Union Bag & Paper Corporation on the electrical precipitator equipment, which is designed to eliminate smoke and many of the odors that result from gases released in the kraft pulp manufacturing process.

Mr. Dunn said the cost of the equipment, together with the rearrangement of breeching to the present stacks, and the removal of other equipment from the site on which the precipitator will be located, will involve an expenditure of approximately $500,000.

"The foundation for the five precipitator units has been laid, and the giant chimney is already up to a height of approximately 150 feet," he continued. "The five precipitators will represent the largest single group installation of its kind in the pulp and paper industry.

"Gases from the nine recovery furnaces in the pulp and paper mill will pass through the precipitators and into the huge smoke stack which is designed to further reduce the odors by discharging the gases into the atmosphere at a high level.

An innovation in industrial smoke stack construction will be the 5 foot by 6-foot opening at the base of the chimney which will permit the entrance of electric shovel trucks at regular intervals to clean out the bottom of the stack.

Hudson Pulp Firm Agrees to Stop Its Advertising Claims

WASHINGTON, D. C.—The Federal Trade Commission has approved a stipulation in which the Hudson Pulp & Paper Corp., New York, and its officers agree to cease and desist from representing that Hudson paper napkins are appreciably stronger, heavier or more absorbent than competing products.

The corporation, together with Abraham Mazer, William Mazer, Jacob Mazer and Joseph Mazer, stipulated that, in connection with the sale and distribution of their paper napkins, they would discontinue representing them as 64 percent stronger or appreciably stronger, 19 percent heavier or appreciably heavier, or appreciably more absorbent than competitors' products, unless their product actually possesses the qualities claimed. According to the stipulation, tests conducted by reliable scientific authority failed to substantiate the advertising claims of the Hudson firm.

Indiana Marks Time On Price Policies

INDIANAPOLIS — The main topic of conversation in the paper trade here last week was concerning the ending of OPA. Up to the present time, elimination of price control has had little effect on local prices. There is a well defined tendency here to hold to former prices as closely as possible. Most of the trade believes that regardless of bickering in Congress, some new form of price regulation will be enacted. However, as in all instances, there were a few who "upped" prices as quickly as they could. These instances have been scarce, however.

Local manufacturers say they are looking for an increase in prices of raw materials and when this develops they naturally will have to increase their own prices in proportion. All hope, and sincerely, that there will be no drastic price inflation. In view of the active demand in all lines, this could happen with little effort.

During the past week there was a good demand for roofing and building paper. Stocks in this area seem adequate for all ordinary purposes. The construction is seriously handicapped by lack of lumber and skilled laborers. Carpenters and painters are virtually nonexistent.

Fine paper demand continued heavy with books, ledgers and covers all moving and prices somewhat stronger. There still is a scarcity in these items and little hope for betterment is expected until late fall, if then.

Tissues of all kinds continued scarce. Toilet tissues were particularly absent and have been for a month or so. Newsprint demand continued heavy with local publishers saying they still are having difficulty in securing adequate tonnages.

The waste paper demand was heavy last week. Virtually all grades were moving and collections appear to have fallen off some. As a result there are low stocks in local warehouses. Rag demand also was heavy with new cotton cuttings being most wanted. However, rags suitable for roofing manufacture were in good demand.

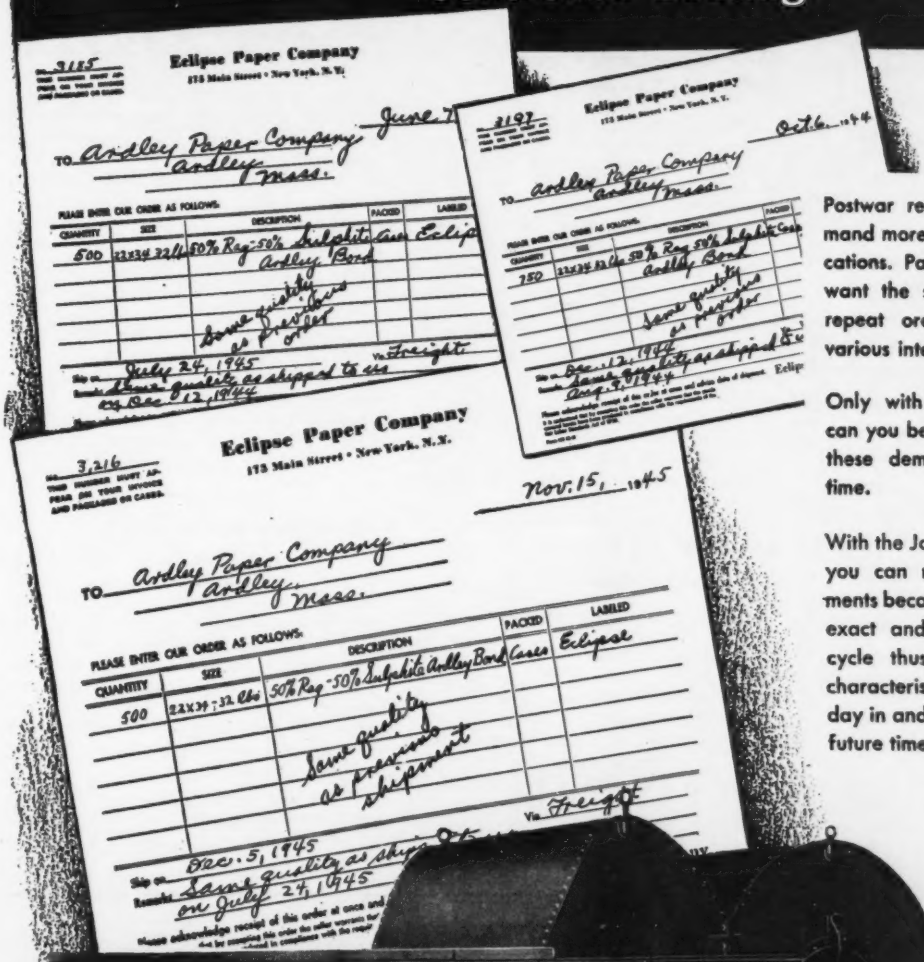
Wisconsin Reservoirs Are 92 Per Cent Full

WAUSAU, Wis. — Wisconsin river reservoirs of the Wisconsin Valley Improvement Company gained about 17 percent of their total capacity during the week ending June 30. The total gain amounted to 2,855,000,000 cubic feet. This brought the reservoirs to 92 percent of their total capacity as compared to 75 percent on June 23.

The total reserves in these reservoirs on June 30 were 15,596,000,000 cubic feet as compared to 15,916,000,000 cubic feet on the same date in 1945. Last year's reserves on that date were the highest in the company's history, the report showed.

JONES-BERTRAMS PATENT BEATER

Controlled Beating Performance . . .



Postwar requirements will demand more rigid paper specifications. Paper distributors will want the same quality, when repeat orders are issued at various intervals of time.

Only with controlled beating can you be assured of fulfilling these demands from time to time.

With the Jones-Bertrams Beater, you can meet these requirements because it operates on an exact and controlled beating cycle thus reproducing stock characteristics batch after batch, day in and day out, and at any future time.

JONES-BERTRAMS PATENT BEATER

Jones

E. D. JONES & SONS COMPANY-PITTSFIELD, MASS.
Builders of Quality Machinery for Paper Mills

National Gypsum Buys Western Board Mill

KALAMAZOO—The National Gypsum Company of Niagara Falls has purchased the Western Board and Paper Company plant in this city. Operation of the plant will be under the National Gypsum Company name and will be known as the Kalamazoo plant of this company.

Leonard L. Hank has been appointed plant manager. He will assume full charge of all operations for the National Gypsum Company. Hank, who has been in the city for some weeks during completion of negotiations, was with the United Paper Board Company in Lockport, N. Y., and the U. S. Gypsum Company in Chicago before joining the National Gypsum Company.

Assumption of operations of the Kalamazoo mill is a step in a plan of more complete integration by National Gypsum. In January this company took over a paper mill at Garwood, N. J., which, with the new Kalamazoo mill and its Newburgh, N. Y., mill now gives it three paper manufacturing plants.

Since about the first of this year, National has also purchased three 10,000 ton ships to carry gypsum rock from its Nova Scotia quarries to its seaboard plants. Two $3,000,000 plants are under construction at Baltimore, Md., and Kimballton, Va.

By 1947 the National Gypsum Company expects to double its prewar volume of business.

Masonite Reports Profits

CHICAGO — The Masonite Corporation earned a net profit of $682,636 for the three months ended May 31 after all charges including income taxes. These earnings, after providing for preferred dividends, amount to $1.07 per share on the 600,000 shares of common stock outstanding. Profits before federal and state income taxes for the quarter totaled $1,369,486. Net sales for the period totaled $4,728,550. Cumulative net profits for the nine months ended May 31 were $1,831,006 or $2.85 a share, Holland reported.

Gair Woodlands Opens Offices in Savannah

SAVANNAH, Ga., July 5—Gair Woodlands, a subsidiary of the Robert Gair Company, Inc., has taken a suite of offices on the eleventh floor of the Savannah Bank & Trust Company building, it was announced this week.

T. W. Earle, president of the subsidiary, said the offices would be occupied about August 1. The woodlands subsidiary will supply pulpwood for the $9,000,000 kraft and paper mill to be erected at Port Wentworth by the Southern Paperboard Corporation, he added.

It is reported that Gair Woodlands have already acquired about 10,000 acres of timberland in Appling and Jeff Davis counties, along with several tracts in North Florida.

Albany Votes Down Paper Mill Project

ALBANY, Ga.—According to President R. S. Yarbrough, the Albany Chamber of Commerce has put thumbs down on the location of a paper mill in Albany and vicinity.

Mr. Yarbrough, speaking for the board of directors, said these officials took the negative stand "because the citizens of the city were divided in opinion regarding the mill, and because there had been no definite assurance of odor controls of the proposed mill."

G. Fred Estey Retires As Carter Treasurer

SPRINGFIELD, Mass.—G. Fred Estey has resigned as treasurer of the Carter Paper Company, a position he had held continuously for 37 years. He was a guest of honor at a dinner given by his associates at the Hotel Sheraton, and was given a tapestry easy chair. Mr. Estey, who was 82 years old this month, will continue to be a director of the company. At the stockholders meeting Friday the company elected its president, Charles L. Beckwith, as treasurer to succeed Mr. Estey. Neil S. Beckwith was elected assistant treasurer.

Estey came to Springfield in February, 1908, after being connected with the Boston Rubber Shoe Company, Boston, and became assistant treasurer of the Carter firm. A year later he became treasurer and has held that office ever since.

Neil Beckwith was toastmaster at the dinner and the speakers were Charles Beckwith, A. C. Macfarlane, vice-president, and George F. Nichols, who made the presentation.

Moses Leaves for Cruise

SPRINGFIELD, Mass. — Horace A. Moses, chairman of the board of the Strathmore Paper Company, left Friday for a month's cruise along the East Coast in an 88-foot chartered houseboat. Mrs. Moses reported that her husband was "very tired" and wanted to get a good long rest, free from the pressures of business, which have been exceptionally heavy during the past few months.

After his return, Moses will spend another month at his farm, Woronoake Heights, before returning to his duties at Strathmore.

FINANCIAL RECORD OF THE WEEK

New York Stock Exchange

High, Low and Last for Week Ending July 6, 1946

STOCKS

	High	Low	Last
A. P. W.	8⅞	8½	8½
Armstrong Cork Co.	59	57½	58½
Celotex Corp.	35⅝	34	34
Celotex Corp., pf.	22½	22	22½
Certain-Teed Products Corp.	25⅞	24⅝	24¾
Certain-Teed Products Corp., pf.	....	....	....
Champion Paper & Fibre Co.	59¾	59¾	59¾
Champion Paper & Fibre Co., pf.	112½	111	111½
Congoleum Nairn Co.	37¾	36	36½
Container Corp. of America	53¾	52	52½
Continental-Diamond Fibre Co.	15⅛	14½	14½
Crown-Zellerbach Co.	35⅝	33¾	34¼
Crown-Zellerbach Co., pf.	108⅛	107¾	108
Dixie Cup Co.	50½	48¼	50
Dixie Cup Co.—A	59	59	59
Flintkote Co.	40⅞	39⅜	40⅛
Flintkote Co., pf.	114	113	114
Robert Gair	11	10⅜	10⅜
Robert Gair, pf.	20½	20⅛	20⅜
International Paper Co.	48⅜	46½	46¾
International Paper Co., pf.	120	117	118
Johns-Manville Corp.	152	150	150
Johns-Manville Corp., pf.	137½	137½	137½
Kimberly-Clark Corp.	67½	67½	67½
Mac Andrews & Forbes	40¾	39⅝	39⅝
Mac Andrews & Forbes, pf.	....	....	....
Masonite Corp.	67½	66	67½
Mead Corp.	25¼	23⅝	24¼
Mead Corp., pf. A—6%	106¼	106¼	106¼
Mead Corp., pf. B—5½%	106¼	106¼	106¼
National Container Corp.	36	35	35
Paraffine Companies, Inc.	....	....	....
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	29¼	27¾	27¾
Rayonier, Inc., pf.	38	37⅝	38
Ruberoid Co.	55½	54½	54½
Scott Paper Co.	58	57	58
Scott Paper Co., pf.	110	110	110
Sutherland Paper Co.	45½	44	44
Union Bag & Paper Corp.	38½	36⅜	36⅜
United Paperboard Co.	13½	13⅜	13½
U. S. Gypsum Co.	127	124	126½
U. S. Gypsum Co., pf.	201	200½	200½
West Virginia Pulp & Paper Co.	49	48	48¼
West Virginia Pulp & Paper Co., pf.	113½	113½	113½

BONDS

Abitibi Pulp & Paper Co. 5s '53	....	....	....
Celotex Corp. 3¾s '55	....	....	....
Certain-Teed Products Corp. 5½s '53	....	....	....
Champion Paper & Fibre Co. 3s '65	....	....	....
International Paper Co. 5s '47	101⅛	101⅛	101⅛
Mead Corp. 3½s '53	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending July 6, 1946

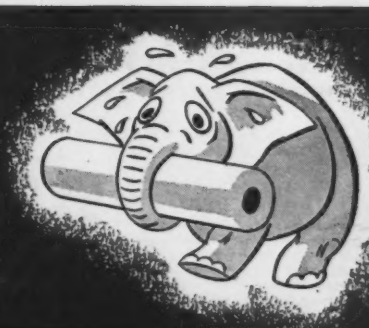
STOCKS

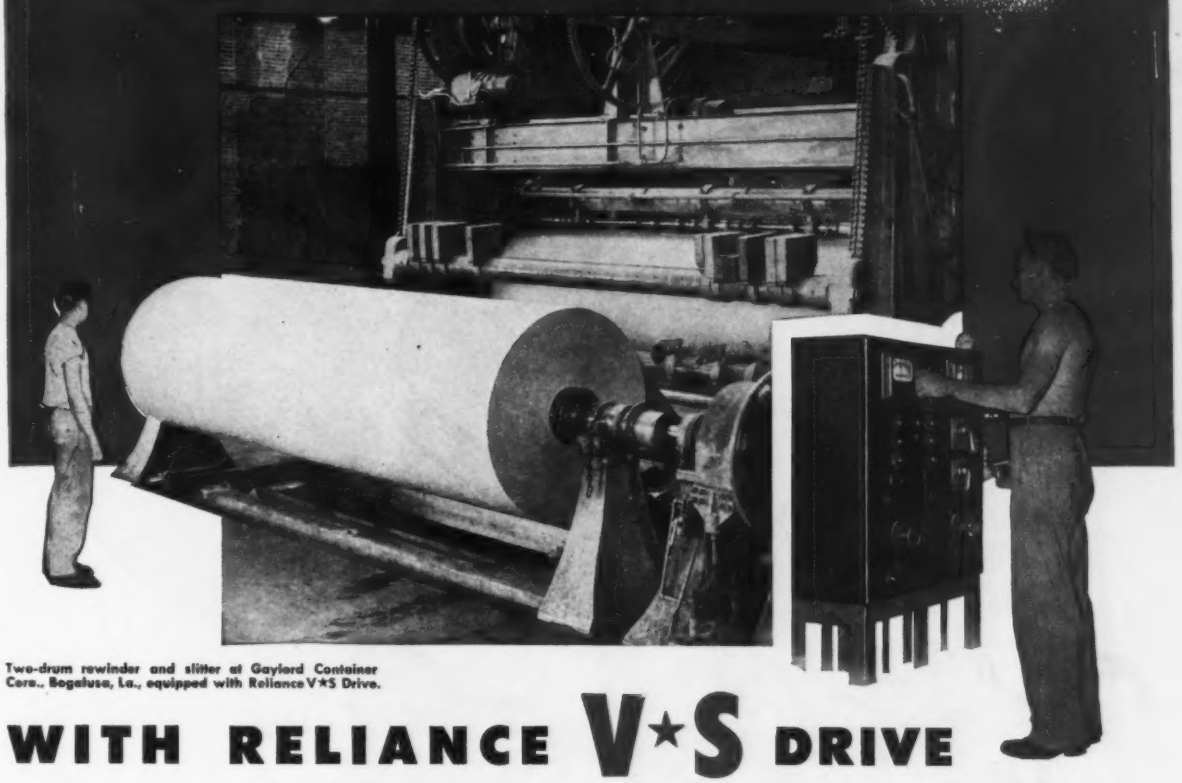
	High	Low	Last
Great Northern Paper Co.	41½	40½	41
Hummel-Ross Fibre Corp.	18¾	17¼	17⅜
St. Regis Paper Co.	14⅜	14¼	14⅜
Taggart Corp.	10⅜	10¼	10¼

BONDS

American Writing Paper Co. 6s '61	102½	102½	102½

HANDLING JUMBO ROLLS ECONOMICALLY





Two-drum rewinder and slitter at Gaylord Container Corp., Bogalusa, La., equipped with Reliance V★S Drive.

WITH RELIANCE V★S DRIVE

Jumbo rolls of paper 200 inches wide are rewound and slit in a single operation which produces up to 10 smaller rolls all ready for shipment. Here's *real money-saving efficiency*—made possible by a giant machine equipped with a multi-motored Reliance V★S Drive.

V★S, the *All-electric, Adjustable-speed Drive operating from A-c. Circuits,* provides quick starts and stops, smooth acceleration and other important advantages along with truly remarkable ease of control. By improving quantity and quality of output, as in so many other paper mill applications, it has more than paid its way. Chances are V★S can make many of *your* operations faster and more efficient. To investigate the possibilities, write today for Bulletin 311—or call the nearest Reliance office.

RELIANCE ELECTRIC & ENGINEERING CO.
1099 Ivanhoe Road • Cleveland 10, Ohio

RELIANCE A-C D-C MOTORS

"Motor-Drive is More Than Power"

THE MEAD SALES COMPANY
230 PARK AVENUE, NEW YORK 17, N. Y.
111 W. WASHINGTON STREET, CHICAGO 2, ILL.

MEAD
pulp

DISTRIBUTORS OF WOOD PULP
BLEACHED AND UNBLEACHED
CHEMICAL AND MECHANICAL WOOD PULP

Elmer, Paul Bunyan's moose hound, with his hind quarters sewed on upside down as a result of an axe accident, could run twice as far without tiring—shifting from one end to the other.

A reproduction of this incident from the fabulous life of Paul Bunyan—the eighth of a series—will be sent on request. It will contain no advertising.

Highly essential are the diversified uses of carbonate of potash. In many types of products it provides a quality or combination of qualities that make for complete effectiveness and basic value. Among such products are glass and ceramics, soaps, fertilizers, tanning materials, chocolate "dutching" processes, engraving and lithography. As the pioneer producer of carbonate of potash in this country and for several years the only American producer, Niagara offers you the benefits of experienced counsel and advanced knowledge in using carbonate of potash to obtain the most economical and satisfactory results.

An Essential Part of America's Great Chemical Enterprise

Niagara Alkali Company

CAUSTIC POTASH • CAUSTIC SODA • PARADICHLOROBENZENE • CARBONATE OF POTASH • LIQUID CHLORINE • NIAGATHAL

60 EAST 42nd STREET • NEW YORK 17 N. Y.

United Paperboard Opens New Plant

SPRINGFIELD, Ohio — Operations in the new folding carton plant of the United Paperboard Company were started late in June. The new plant will have a capacity three times larger than United's Urbana carton factory. Furthermore, in line with the company's higher quality program the output will become more and more specialized with emphasis on higher grade cartons.

The new Springfield plant occupies a five-story building with 155,000 square feet of floor space. The Urbana carton plant from which the machinery and equipment have been moved to Springfield is less than one-third of this size.

The expansion of fabricating volume and the improvement of their grades are two of the major objectives in the reorganization plans of United Paperboard which were initiated about a year ago when new top executives were elected to head-up the company. By greatly improving its manufacturing and production facilities, United Paperboard has made considerable progress in its program and the company's four folding carton plants now produce high grade cartons for the food, drug, automotive parts, toy, cosmetic and many other industries.

In addition to the new Springfield factory, the United Paperboard Company operates folding carton plants in Victory Mills, Syracuse and Brooklyn, New York. The board requirements of the fabricating plants are supplied by the company's own paperboard mills located in Urbana, Ohio and Lockport and Thomson, New York.

Candidate Immell Urges Better Reforestry

WAUSAU, Wis. — Wisconsin is in need of a more comprehensive reforestation program, Ralph M. Immell, candidate for the Republican nomination for governor, declared here last week. "There should be tree-planting programs in both the southern and northern sections of the state," he declared. "The state is now confronted with the task of rebuilding its forest values in order to maintain the great pulp and paper industries, the veneer plants, the chemical plants and what remains of our lumber industry.

Mr. Immell recently resigned as the state's adjutant general, a position he had held for 20 years. He served as a major general during the war.

River Undermines Peavy Mill

LADYSMITH, Wis.—The wet room of the Peavy Paper Company, a two-story steel and concrete annex, collapsed into the Flambeau river on July 4. William Peavy, president of the company, said the river had undermined the walls of the building. The mill was closed for the holidays, and no one was injured, but a quantity of machinery was lost.

Rains Flood Work At Kimberly-Clark

NIAGARA, Wis. — Heavy damage to construction work at the Kimberly-Clark paper mill here was caused when the Menominee river rose 6 feet in 12 hours as the result of heavy rains June 23 and the preceding few days. The water washed out dikes and flooded the river bank south of the present plant where work of the foundation of a new $5,000,000 addition is underway. R. J. Wells, mill manager, said work was at a standstill last week and that the dikes were to be rebuilt as soon as the water receded and pumping operations were completed.

Kaukauna Machine Will Build an Addition

KAUKAUNA, Wis. — The Kaukauna Machine Corporation will build a $35,000 addition to its No. 3 pattern storage building. It will be located on the northeast of the present pattern storage buildings, which branch from the main building. The structure will be 52 by 60 feet and will be constructed from cement blocks. It will be one story. Work will be started immediately by Hennes and Glaff, local contractors.

Webster Heads Brunswick Rotary

BRUNSWICK, Ga.—William T. Webster, of the Brunswick Pulp & Paper Company, was inaugurated president of the local Rotary Club, June 27.

Putney Mill to be Rebuilt

PUTNEY, Vt. — The Putney Paper Mill, heavily damaged by fire last week, is to be rebuilt. A crew of regular employees plus new help is already removing debris and salvaging machinery, about one-half of which can be used again. Meanwhile the affiliated Green View Tissue company, converting plant housed in the same building as the paper manufacturing company, is operating on stock obtained from tissue mills at Hinsdale, N. H.

Duke Meyer Talks at Menasha

MENASHA, Wis. — Wellington "Duke" Meyer, district representative of the International Pulp and Paper Workers Union, spoke at the monthly meeting of the Marathon Foremen's Club at Germania Hall Tuesday evening, June 25. Henry Young, Neenah, demonstrated magical tricks.

Marathon Employes Plan Party

MENASHA, Wis. — Marathon Corporation will have its annual golf jamboree for its male employes at the Ridgeway Golf Club on Saturday, July 20, Robert Cass, general chairman, announced last week.

OPA Says Records Must Be Kept

WASHINGTON, D. C. — Manufacturers, wholesalers and retailers, and all other persons required under price control regulations to have kept records must preserve them until July 1, 1947, the Office of Price Administration announced last week. The action, Supplementary Order 167, effective as of June 30, 1946, was taken in order to enable OPA to carry on the powers and duties directed to it under the Executive Order 9745 signed by President Truman on June 30, 1946.

The Executive Order authorized OPA to continue all the functions, powers and duties vested in it by the Emergency Price Control Act of 1942, as amended, and the Stabilization Act of 1942, as amended, which did not terminate by expiration of those acts on June 30, 1946.

OPA pointed out that Section 1 (b) of the Emergency Price Control Act of 1942, as amended, provided that all regulations, orders, price schedules and requirements shall be treated as remaining in force for the purpose of sustaining any proper suit, action or prosecution with respect to offenses committed or rights or liabilities incurred on or before June 30, 1946. Today's action assures OPA that all records, books, accounts, invoices, sales lists, sales slips, orders, vouchers, contracts, receipts, bills of lading, correspondence, memoranda or other papers required to be kept under price control will be preserved in keeping with the continuation of its enforcement duties for violations committed before June 30, 1946.

Doyle to Handle Union Bag Sales

CHICAGO—Leonard J. Doyle, general sales manager of the Union Bag & Paper Corporation, has been elected vice president in charge of sales of the company. Before becoming general sales manager, Mr. Doyle was sales manager with headquarters in Chicago. He is well and favorably known to the trade in this area.

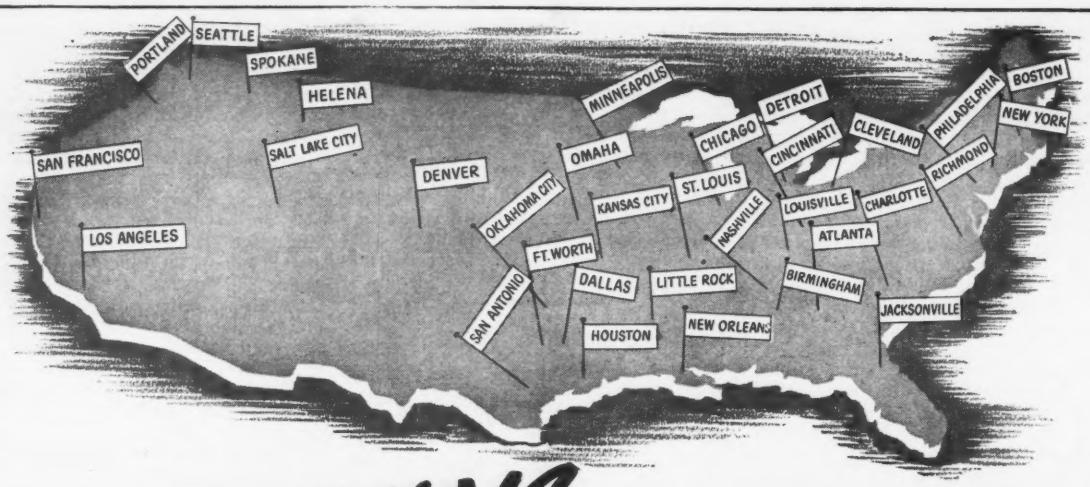
Turner Rejoins D. C. Paper Mills

WASHINGTON, D.C.—Captain Joseph G. Turner, recently relased from active duty after serving more than 3½ years with the Infantry, has rejoined the District of Columbia Paper Mills, Inc., and for the present will be located at the general office. Prior to entering the Army, Capt. Turner was manager of the company's New York Office.

K-C Group Plans Picnic

NEENAH, Wis.—The main board of the Kimberly-Clark Activities Association is making plans for the annual picnic, which will be held August 4 at Riverside Park.

GOVERNMENT-OWNED SURPLUS PROPERTY



33 BUYING SOURCES FOR INDUSTRIAL CHEMICALS

TYPICAL MONEY-SAVING BUYS

Acetone
Acids
Chlorinated Paraffine (approx. 40% & 70%)
Gas cylinders (all types)
Hexachloroethane
Calcium carbide
Methyl bromide
Dyes
Plastic materials
Solvents
Sealing compounds
Petroleum catalysts
Activated charcoal
Silica gel
Calcium chloride
Strontium oxides
Dimethylaniline
Copper naphthenate
Synthetic & natural glues
Printing inks (black & colors)
and most other chemicals

FROM acetone to xylol, the War Assets Administration is disposing of hundreds of surplus industrial chemicals at below market prices. To realize these savings for your business, write, wire or phone the nearest Regional Office, listed below, today. Items not available in your Region will be located for you through the special Inter-office Product Location service.

All items are being sold below current market price. Credit terms may be arranged. Make it *your* habit to check this source when your chemical stocks need replenishing.

All chemicals are subject to priority regulations. VETERANS OF WORLD WAR II are invited to be certified at the WAA certifying office serving your area and then to purchase the material offered herein.

EXPORTERS:

Most surplus property is available to the export market. Merchandise in short supply is withheld from export and if such items appear in this advertisement, they will be so identified by an asterisk.

FREE FACTS

War Assets Administration (address nearest Regional Office)
Please supply, without obligation, prices, available quantities and locations of items written in below:

....
....
....
.....

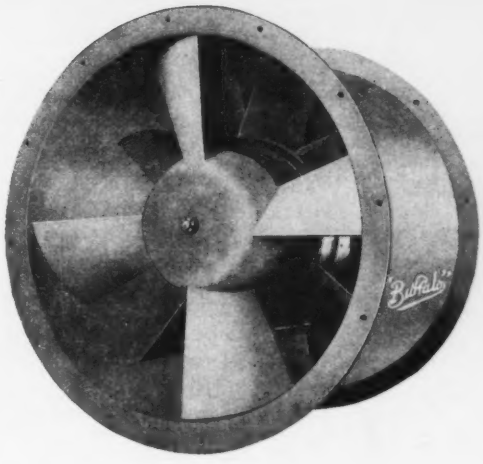
Name.....
Firm.....
Address.....
City..... Phone.....

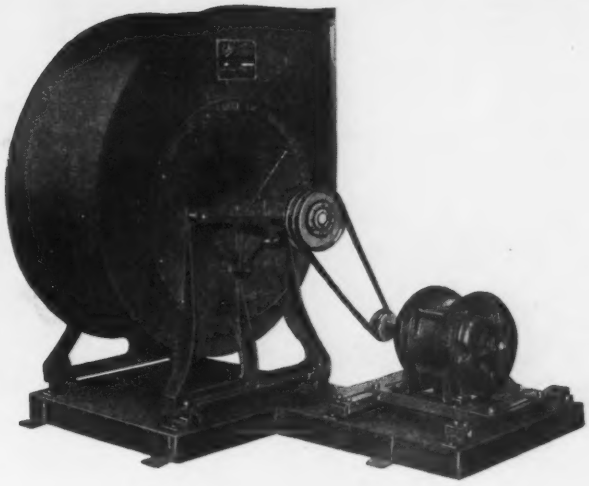
155-3

WAR ASSETS ADMINISTRATION

Offices located at: Atlanta • Birmingham • Boston • Charlotte • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Fort Worth • Helena Houston • Jacksonville • Kansas City, Mo. • Little Rock • Los Angeles • Louisville • Minneapolis • Nashville • New Orleans • New York • Oklahoma City Omaha • Philadelphia • Portland, Ore. • Richmond • St. Louis • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane

THOUSANDS of these great "Buffalo" Fans are in Service





They ARE great fans—not because we say so, but because thousands of users say so. On every kind of ventilating and air conditioning job you'll find Buffalo Limit Load and Axial Flow Fans in service.

During the past five years, more Buffalo Axial Flow Fans were supplied to the U. S. Navy than any other make—during the same period, these and Limit-Load Fans were also supplied by thousands to Industry.

When you have a job that requires reliable, efficient air-moving—there is a Buffalo Fan to give you the best results.

BUFFALO FORGE COMPANY

159 Mortimer Street, Buffalo, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

There's a "RIGHT" "Buffalo" FAN for every job!

Materials Shortage Hits Box Board

SPRINGFIELD, Mass. — J. Loring Brooks, Jr., of the Brooks Bank Note Company, commenting on the critical shortage of proper materials for the manufacture of paper box-board finds materials shortages a critical factor. "At the present time," he said recently, "the demand for that material far exceeds the supply. We are now on informal allocation from the box-board mills and they are giving us what they can. The situation during the past few months, instead of improving, has been interrupted several times.

"The coal strike, with its resultant cuts into the manufacture of raw materials, did much to aggravate the situation, and as a result, today it is much worse than during the war years when the pinch was very bad.

"Then too," he pointed out, "you have the war casualties in the industry which are now coming back to the manufacturing field and they create a whole new field not previously considered in the manufacture and allocation of these materials, which is based on last year's figures."

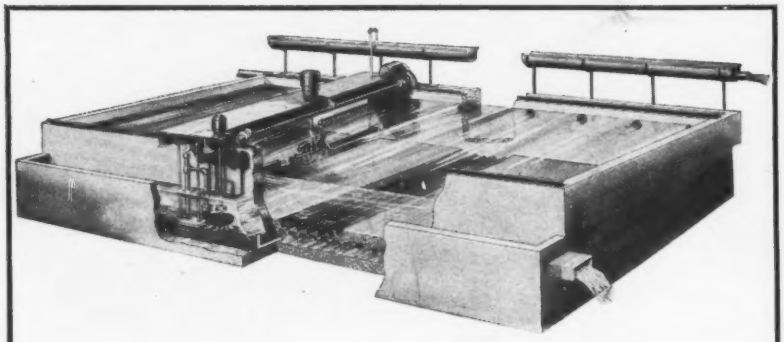
In Chicopee, W. W. Sample of the Sample-Durick company is quick to admit that the fulfillment of orders is now being done with supplies got by "hook or crook."

"We are getting some material," he said, "but we are getting it spottily and from manufacturing plants anywhere from 10 to 150 miles away.

"The vitally needed material in the manufacture of box-board is Swedish wood pulp which up until a short time ago was exceedingly hard to get because the Swedes could get a much better price for it from England, because of OPA restrictions. Lately, the OPA has grudgingly lifted that restriction so that dealers in the United States were able to purchase it.

"The need for waste paper isn't as great now as it was and there is a pretty good supply on hand in the mills. It is a vital factor in the manufacture of box-board, but so is the wood pulp which gives us the surface papering with its more important material qualities which lend to the manufacture of the box-board.

"Even with the waste paper picture in good condition," he concluded, "that doesn't mean we are out of the woods yet for there is a good chance that a shortage in this field might result in the coming winter."



FILTER RESULTS
speak for themselves!

A performance test on the Hardinge Automatic Backwash Sand Filter installed in the Newton Falls (N. Y.) Paper Mill has established the following operating data. The figures shown are averages for the 10-day test period, March 5-14, 1946:

P.P.M. SUSPENDED SOLIDS Influent	Effluent	PERCENT REMOVAL	FLOW M.G.D.
8.47	0.25	97.4	3.25

The unit was installed to filter raw reservoir water going into the papermaking process. The Filter is 12½' wide by 90' long, with 1100 sq. ft. of filter area.

CONSULT NEAREST OFFICE ABOUT THE A·B·W FILTER

HARDINGE
COMPANY INCORPORATED
YORK, PENNSYLVANIA — 240 Arch St. • Main Office and Works
NEW YORK 17—122 E. 42nd St. • 205 W. Wacker Drive—CHICAGO 6
SAN FRANCISCO 5—501 Howard St. • 200 Bay St.—TORONTO 1

Railway Supply & Manufacturing Appoints Dr. Jerry Moore

CINCINNATI — The Railway Supply and Manufacturing Company has appointed Dr. Jerry H. Moore of Raleigh, North Carolina, as director of its Fiber Research Department. As cotton technologist with the North Carolina State Agricultural Experimental Station since 1927, Dr. Moore has specialized in the development of fiber qualities and staples to give the best results in spinning. Much of his research has been in cotton genetics and breeding and the relation of physical properties of fibers to cotton breeding and manufacturing.

The Railway Supply and Manufacturing Company specializes in the grading, marketing, and processing of cotton and synthetic fibers, with plants and sales offices in Franklin, Ohio; Atlanta, Ga.; Charlotte and Greensboro, North Carolina; Covington, Tennessee; Chicago; New York; and Detroit.

Inaugurate Campaign To Sell More Paper Boxes

CHICAGO—The National Paper Box Association has begun a national advertising campaign centered around the creation of interest in packages which promote both sales and good will. It is reported that the campaign will feature the fact that set-up boxes are rapidly increasing in popularity because of their ability to create consumer acceptance and to act as an advertising medium in their own right. The Association has provided a survey for interested manufacturers which develops facts on paper products, stationery and allied lines, the survey to be made available through paper box manufacturers now doing business with the users of paper and stationery throughout the country.

TITANOX ... *the brightest name in titanium pigments*

IN PAINT Titanox-A gives opacity, promotes brightness, resists fading and adds durability to coatings for both interior and exterior use. IN PAPER Titanox A imparts the important qualities of opacity, brightness and printability, and is easy to handle because of its ready dispersion quality. IN RUBBER Titanox-A supplies a high degree of whiteness, develops resistance to abrasion and sun discoloration. IN INKS Titanox-A assures greater color stability and opacity.
INK

TITANOX-A ...another First!

In 1925, Titanox-A (Titanium Dioxide) was developed at Niagara Falls, New York, as a result of research by the staff of The Titanium Pigment Company, Inc. This was the first pure titanium dioxide pigment commercially produced in the United States... another "TITANIUM PIGMENT FIRST".

This new product was superior to any other Titanium pigment available up until that time and even approached present-day Titanox-A in opacity, whiteness and brightness. These improved characteristics make versatile Titanox-A the preferred pigment for a great variety of uses.

While keeping quality uniformly high, the makers of Titanox pigments are also exerting every effort toward increasing output to meet a tremendously expanded industrial need.

TITANOX TITANIUM PIGMENT CORPORATION
SOLE SALES AGENT

111 Broadway, New York 6, N. Y.
104 South Michigan Ave., Chicago 3, Ill.
350 Townsend St., San Francisco 7, Cal.
2472 Enterprise St., Los Angeles 21, Cal.

● Maintenance men know from experience how little it costs to service a hoist that is simple in design. That's why it will pay you to switch to the simple construction of a Reading UNIT CONSTRUCTED Electric Hoist.

The hoisting unit in a Reading Electric Hoist has only four moving parts. The result is fewer wearing parts, fewer parts for you to overhaul or repair. Then too, each one of the four hoist units—suspension, motor, control and hoisting units, can be removed for maintenance purposes without the time-consuming "break-down" of any other unit.

Assure yourself of these cost-reducing advantages—contact your nearest Reading Hoist distributor, today. And for full details on the Reading UNIT CONSTRUCTION Plan, write us for your free copy of "144 Answers To Your Hoisting Problems."

READING CHAIN & BLOCK CORPORATION
2113 ADAMS ST., READING, PA.

CHAIN HOISTS • ELECTRIC HOISTS
OVERHEAD TRAVELING CRANES

READING HOISTS

Brotherhood Head Lauds Whitcomb

SPRINGFIELD, Mass.—In a letter to the Springfield Union, John P. Burke, president-secretary of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, today paid high tribute to William A. Whitcomb, president of the Great Northern Paper Company, who was shot to death in his office in Boston.

"In his tragic death," said Burke, "New England has lost an industrial leader with a record of having dealt with organized labor for a period of 35 years without the semblance of a strike in the company's mills.

"I doubt if Mr. Whitcomb ever made any claims to being 'a friend of labor' in the sense that this term is used by candidates for public office, or by those seeking some personal advantage at the expense of labor.

"I dare say, however, that few men did more in a practical way than did William A. Whitcomb to help workingmen obtain a better standard of life. Shortly after he became manager of the Great Northern in 1911, he induced the then president Garret Schenchk, to go all the way and recognize the unions in the mills of the company.

"It did not take National Labor Relations Act to win union recognition and the right to bargain collectively for the workmen in the Great Northern mills. Mr. Whitcomb unhesitatingly granted all these rights 35 years ago.

"Time and again I heard Mr. Whitcomb say that to run a business successfully the rights of the workmen, the customers and the stockholders all had to be taken into consideration. Whitcomb believed the workmen should be paid just as good wages as the company could pay and keep in sound financial condition, that the customers of the company should be furnished good paper at a reasonable price and that the stockholders were entitled to a moderate return on their investments.

"If a man with an antilabor bias had headed Great Northern how different might the story be of labor relations in the mills of this company and in the mills of many other companies.

"William A. Whitcomb was a man of integrity who believed in the integrity of other men. His influence and his deeds, though never publicized, eased life's burdens for thousands of his fellow men."

Harold E. Walker

CANTON, N. C.—Harold E. Walker, aged 63, production manager of the Canton Division, Champion Paper and Fiber Company, died in an Asheville hospital June 28, following a week's illness.

A native of Burnside, Conn., Mr. Walker came to Canton 12 years ago after serving for some time as vice-president of the Reading Paper Mills in Reading, Pa. He was an active member of the Pigeon River Masonic Lodge in Canton and served successfully for four years as wartime chairman of the Canton Red Cross chapter.

The deceased is survived by his widow, Mrs. Marion Pierce Walker; one daughter, Mrs. Alta W. Harper, Erie, Pa.; one son, Douglas P. Walker, Canton; and two grandchildren.

Arthur Huggins

HOLYOKE, Mass.—Arthur Huggins, for many years prominently associated with labor unions in this vicinity and an organizer and president of the International Brotherhood of Papermakers, died at his home last week after a short illness.

He was born in Orange, Tex., came to South Hadley twenty years ago and immediately became prominently identified with local labor circles. At one time he served as president of the international and also served for some time as the secretary-treasurer. Besides his widow, he is survived by one daughter, Janet.

Appleton Coated Grants Five-Cent Wage Boost

APPLETON, Wis.—A five-cent hourly wage boost has been granted to Appleton Coated Paper Company workers under a new contract recently signed, it was announced by Clarence Lambie, president of Local 16 of the Associated Unions of America, bargaining agent. The contract also provided for 48 hours paid vacation for employes having one year's employment, and 96 hours paid vacation for over five years' employment. Double time will be paid on Sunday, when Sunday is the seventh consecutive day of work.

Charles E. Bertschy

CANTON, Mass. — Charles E. Bertschy, sales representative of the Draper Brothers Company, died at the Malden Hospital, Malden, Mass., on June 22nd. Mr. Bertschy was taken suddenly ill while on a trip through the East accompanied by Mrs. Bertschy, and died soon after being admitted to the hospital.

A native of Milwaukee and a graduate of Beloit College, he was formerly associated with the Hummel & Downing Company of Milwaukee. Mr. Bertschy is survived by his wife, his mother and a sister.

Victor H. Blache

PITTSFIELD, Mass. — Victor H. Blache, retired foreman of the Eaton Paper corporation and an employee of that company for 38 years, died suddenly at his home June 25 of a heart malady. He was one of the founders of the Mutual Aid organization of the Eaton corporation.

"Those Flintkote Industrial Adhesives helped us solve that production problem"

. . . that's the sort of enthusiastic comment frequently heard from industrial engineers who specify and use Flintkote processing materials in their plants.

The diversified line of Flintkote industrial products now includes many basic and compounded materials with proven performance records. They fit individual needs . . . improve end results . . . save valuable man-hours.

Flintkote manufactures asphalt and rubber base specialties . . . aqueous dispersions . . . protective coatings . . . adhesives . . . sealers . . . saturants . . . insulators . . . and many others.

Frequently, these found their places after Flintkote Service Technicians had studied conditions on the job. Then, with the aid of Flintkote Research Laboratory, a better, quicker, or less expensive method was worked out. The services of these specialists *are now available to you.*

OTHER WELL-KNOWN FLINTKOTE PRODUCTS

HYDRALT* Protective Coatings, the many purpose asphalt emulsions, will outlast other bituminous materials exposed to weather . . . Flintkote Flooring Emulsions, the key to heavy-duty mastic flooring . . . FLINTDEK†, anti-slip floor coating, for safeguarding smooth floor areas . . . SYNTEX* Products . . . aqueous dispersions of rubbers and resins, for combining, impregnating and coating. Write for full information without delay. **Trade-mark Reg. U. S. Pat. Off. †Trade-mark*

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Australia Looks to Research For Future of Its Industry

PERTH, Western Australia—At the recent seventh annual Australian Pulp & Paper Cooperative Research Conference, held at the Boyer Newsprint Mill, New Norfolk, Tasmania, delegates were told by S. L. Kessell, managing director of Australian Newsprint Mills, Ltd., that the paper industry in Australia could maintain its position only by continuing the research side.

"The Australian paper industry has been developed from research work carried out here in the Commonwealth," said Mr. Kessell, "and in opposition to advice received from overseas, I am pleased indeed to see the splendid cooperation which has developed between the three Australian paper manufacturing companies, and also with the vision shown by the Forests Products Division of the Council for Scientific and Industrial Research."

Among the reports received at the conference was one which showed that research institutes in the United States, Canada and Great Britain were becoming increasingly interested in the Australian work of recent years, and members considered that research workers in the Commonwealth were already leading the world in some aspects of the work. Certain instruments for the evaluation of pulp and paper had been developed in Australia, and a number of inquiries about them had been received from overseas.

Prominent in the research field has been J. L. Somerville, a young man from Western Australia, who some little while ago was admitted as a Fellow of the Australian Chemical Institute, an honor granted in recognition of his research work which has made possible the successful manufacture of newsprint from Australian eucalyptus wood.

It is reported that, as a result of investigations in which both the Federal and Tasmanian governments are interested, new developments are likely at the Australian Newsprint Mills. The managing director, Mr. S. L. Kessell, says that "although the newsprint mills at Boyer, which began production in 1941, have made a valuable contribution to Australian newspaper supplies during the war period, the present plant is capable of providing only 10 per cent of Australia's post-war newsprint requirements, and the existing works are regarded as only the first stages of a much larger undertaking which will obtain all its raw material for newsprint manufacture from local sources. But, as the first essential for such development, the character and the contents of the forests on the company's concession must be determined with greater accuracy, and previous estimates are now being checked by the latest methods of aerial survey, and an examination is being made for routes for the construction of railway lines which will be necessary to bring logs from forests extremely difficult of access.

Here is a factor which alone is responsible for the high costs of raw material, compared with timber floated down rivers to paper mills in the northern hemisphere. But we have proved that newsprint of a satisfactory character can be made from Tasmanian hardwoods, but considerable research is still required to lift the quality of the product to the best grade of Canadian newsprint."

The Premier of Tasmania reecntly made an official statement to the effect that his government was quite satisfied that the new wood pulp industry which is to be established near Launceston will not compete with similar industries already functioning at Burnie and Boyer, as the new undertaking will manufacture wood pulp, paper board and allied cellulose products. It also intends to experiment with the production of a pulp board for the packing of apples, and if a suitable product can be evolved it is certain to be readily absorbed by the local apple growers, to whom it would prove a veritable boom. The government is now introducing a bill to grant the new company water and forestry concessions.

The United States Marathon Paper Mills Company has secured a patent in this country (No. 120591) for a new coating composition for application to sheet materials. Composition consists basically of microcrystalline wax and a metallic soap dispersed in the wax which is conditioned in a molten state for application to the material, and heat sealed. Coating formed, it is claimed, is continuous, smooth, flexible and highly moisture-proof. In an alternative process the microcrystalline wax is mixed with aluminum stearate, and the mixture conditioned to form a thixotropic gel.

A. G. Cameron, director of the Goodyear Tire and Rubber Company of the United States, and vice-president of Goodyear Foreign Operations, is at present visiting Australia investigating the local manufacturing position and conferring with executives of the Australian offshoot regarding post-war development schemes, one of which will possibly be the erection of a plio-film plant to manufacture a packaging material similar to cellophane.

At a recent interstate conference of apple and pear growers, a motion was passed: "That the Australian Apple and Pear Growers' Council be requested to give consideration to the principle on which import licenses for fruit wrapping material are issued."

Clopay Exhibits Drapes Of Plastic Fiber

CINCINNATI, Ohio—Cincinnati's buying public last week was introduced to a new local made product when a number of stores in the city placed on sale the cellulose fibre drapes made by the Clopay Corporation. The development of the drapes is an application of techniques developed by the Clopay concern during the war, Arthur L. Thexton, executive vice president, said. He also commented that while drapes of this type are commonly referred to as "paper," the new Clopay product should properly be called a plasticized fiber because of the processing methods it goes through in making it flame-resistant and pliable.

The new Cincinnati-made product is being produced in a factory especially acquired for the purpose. This block-square structure, acquired early this year from the Steel Materials Corporation, is located at Township Ave. and the Baltimore and Ohio Railroad in Elmwood.

Clopay's main plant is located on Western Avenue and extends three blocks north from Crosley Field to Dayton Street. Another plant is situated in Norwood, Ohio, and a subsidiary factory in Spring Valley, N. Y.

New Bulletin Describes Popular Hayward Grapples

Packed from cover to cover with suggestions for handling such materials as pulp wood, rock, scrap iron, heavy trash and sugar cane, the new bulletin just published by the Hayward Company, 50 Church Street, New York 7, N. Y., contains helpful information on all modern Hayward grapple devices for many diversified special services.

Designated as Bulletin No. 802, this latest Hayward publication is fully illustrated. It indicates the large amount of data and information Hayward is in a position to supply to meet almost any grapple requirements.

Permutit Issues Bulletin On Oil Removal Filters

Advantages of the pre-formed floc type of condensate oil removal filter over the older type of granular bed filters with separate alum and alkali feeds are described in a bulletin issued by The Permutit Company. This bulletin, with details on the operation of rake agitator and rotary surface washer units, can be had upon written request to the company at 330 West 42nd Street, New York 18, N. Y.

Betz Booklet Describes Boiler Water Conditioning

A booklet, "The Six Fundamentals of Betz Water Conditioning Service," illustrates and describes how W. H. and L. D. Betz, Philadelphia, Pa., extends a supervisory service for boiler water conditioning.

Every known requirement of leading industries, every proved scientific advance in pneumatic control, every advantage of unmatched research and experience, has guided the design of the new Foxboro Model 40 Stabilog Controller. The results are simpler and more rugged construction, easier and more stable adjustments, unequalled performance.

Foxboro M-40

STABILOG* CONTROLLER

Write for complete explanation in Bulletin 381. The Foxboro Company, 114 Neponset Avenue, Foxboro, Mass., U.S.A.

*Reg. U. S. Pat. Off.

Sees Lowered Duty Still in Future

The American paper industry need not fear the anticipated wholesale reduction of duties on imported paper until some time during 1947, according to a report issued to the paper industry by Warren B. Bullock, manager of the Import Committee of the American Paper Industry. It had been expected that negotiations for a duty reduction program would have been well under way by the present time, but delays in the United States Government's efforts to hold a fifteen nation conference on the subject have complicated the program. On Oct. 15 the Preparatory Committee for the proposed international conference will meet in London and the State Department has announced that it will not make public the list of items which will come up for consideration until after that committee's meeting.

After the so-called "bargaining list" is announced, American industry will have at least sixty days in which to present its views in written briefs, another period of from two to four weeks will elapse before oral hearings are conducted and not until after these hearings will actual negotiations be started.

Meanwhile, however, the Import Committee is collecting and organizing the data which will be presented at both the oral hearings and for written briefs to demonstrate the dangers to American investments and labor through any further reductions in duty rates. As one example the situation as to printing papers will be cited. In 1938 imports of such papers were about 9,000 tons. With a 40 per cent duty reduction imports are now running at a rate of from 4,000 to 5,000 tons per month. The proposed conferences might involve a reduction up to 50 per cent of the already too-low duty rates on such papers. Comparable situations exist as to other grades.

Hoberg Raises Auchter to Vice-Presidential Rank

GREEN BAY, Wis.—Martin J. Auchter was elected a vice-president in charge of manufacturing at a recent meeting of the Board of Directors of the Hoberg Paper Mills. Mr. Auchter started in the engineering department in 1932; was appointed chief engineer in 1939, and assistant general superintendent in 1945.

Marathon Set for Picnic

MENASHA, Wis.—The 1946 Marathon picnic, scheduled Saturday, July 27, at Smith park, to employes who have returned from the armed forces, it was announced last week. Games and contests will be held in the afternoon. Evening entertainment will include dancing and movies.

Pulp Imports Reach Quarter Million Tons

Imports of wood pulp into the United States from overseas totaled 5,062 short tons during the week ended June 20, 1946, the Forest Products Section, Office of Domestic Commerce, Department of Commerce, reported today.

The aggregate quantity of wood pulp imported from overseas sources from January 4 through June 20 amounts to 246,804 short tons. This tonnage was composed of about 36 per cent unbleached sulphite wood pulp, about 51 per cent unbleached sulphate wood pulp (kraft), and about 5 per cent of bleached sulphite grades other than high alpha and dissolving. The remaining 8 per cent was mechanical pulp, bleached sulphate, and special chemical grades of bleached sulphite.

Imports of wood pulp from Sweden totaled 206,090 short tons as against 40,714 tons from Finland. Of the total imports from overseas, 84 per cent came from Sweden while 16 per cent came from Finland.

Weston Consolidates Booth-Eddy Interest

TORONTO — The purchase has been concluded, according to information from Ottawa, of the mills, timber limits and other assets of the J. R. Booth Company, Ltd., by the E. B. Eddy Company, Lt. Controlling interest in both these companies has been held for some time by Garfield Weston, of Caulfield, B. C., but now will be under a single board of governors, as was intimated in last week's issue with the announcement of a newly-formed investment and holding company to be known as Eddy Paper Co., of Hull, Que. Acquisition of the Booth properties extends the Eddy timber limits to over 5,800 square miles, producing an annual yield of 160,000 cords of wood. Combined production of the mills is estimated at approximately 138,000 tons of finished products yearly, including 39,000 tons of newsprint.

Smith Paper Rewards Suggestions

LEE, Mass. — William Eckert was awarded $100 under the paid suggestion system at Smith Paper Inc., for a suggestion on a saveall on a paper machine. A joint award of $34 each went to Bradford Smith and William Bontell for a new method of drawing stock carts. Edward Herlihy received $5 for a suggestion on the insto-gas apparatus.

Lane Sells Columbia Line

BOSTON—Philip H. Lane has been appointed New England sales manager for Columbia Paper Products Company, Baltimore, manufacturer of glassine, cellophane, and wax specialty bags.

Irwin Doubts DDT As Budworm Cure

TORONTO — The widely-publicized spraying of Ontario's forests with D.D.T. is only "eyewash" as far as coping with the budworn is concerned, according to J. C. W. Irwin, secretary of the Save the Forests League. "Unless the experts can find some hitherto undiscovered disease that can be spread among these insects, only the Atlantic ocean can top their movement eastward," Mr. Irwin states.

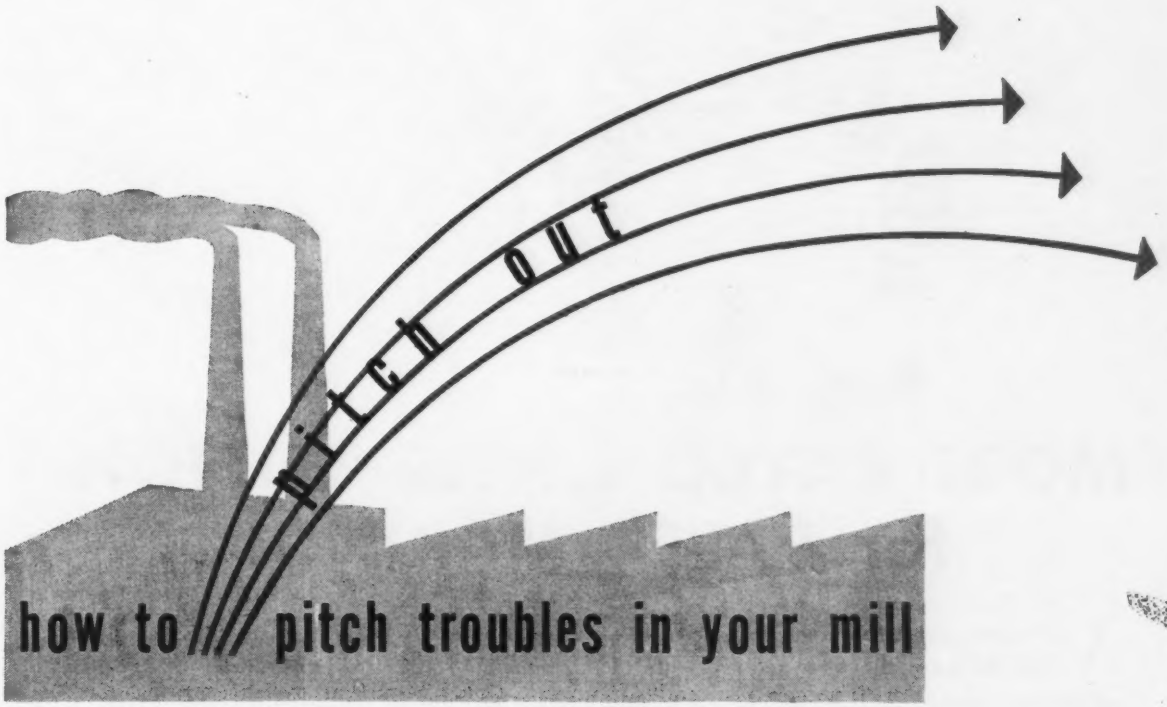
"Publicity given the attack on the budworm with D.D.T. created the unfortunate impression it was under control. The chief value that may come out of the spraying is that useful information may be gathered for handling localized outbreaks after the present epidemic subsides. Only 1/500th of the area seriously attacked by budworm had been sprayed, and in this area only 60 per cent kill has been reported.

"The budworm is not a new plague," Mr. Irwin went on. "There were several outbreaks in the United States during the last century. Quebec and the maritimes had an epidemic between 1909 and 1919, which destroyed upwards of 25,000,000 cords of white spruce and balsam. The budworm has been working in Ontario forests since that time and became epidemic in 1935. It was not until 1944, however, that the Ontario government took action when this plague had already seriously infected thousands of square miles. Control by artificially nurtured parasites was soon recognized as hopeless and spraying of D.D.T. solutions from airplanes was decided upon.

"This is an expensive operation, and hazardous to the airplane crews who must fly a few hundred feet above the tree tops. It can be done only on days when weather and wind conditions are right, and the cost of spraying in Ontario has been about $8 per acre. In a province which has resolutely resisted all persuasion to undertake sound forest management, which is the only way suggested by the entomologists to control the budworm, it is almost amusing to observe such expenditures. If spent in advance for the necessary management, roads and silvicultural practice, $8 per acre would have given permanent improvements, without which combatting the budworm and other insects is likely to be futile. Now we have spent the $8 and have lost most of the wood as well.

"In 1920, after the Quebec outbreak, forests entomologists advised our governments the only way they knew of keeping the budworm in control was by forest management, which would control the density of balsam, the favorite food of the budworm. Nothing whatever was done until the situation became desperate and it was too late.

"Save the Forests League hopes to awaken public opinion to insist on proper management," Mr. Irwin concluded.



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...helping to keep pitch dispersed
...adsorbing the pitch physically

* * *

Technical data on Mertanol 7L, trial samples and the counsel of Monsanto paper experts are yours upon request. Address your request to: MONSANTO CHEMICAL COMPANY, Merrimac Division, Boston 49, Mass.

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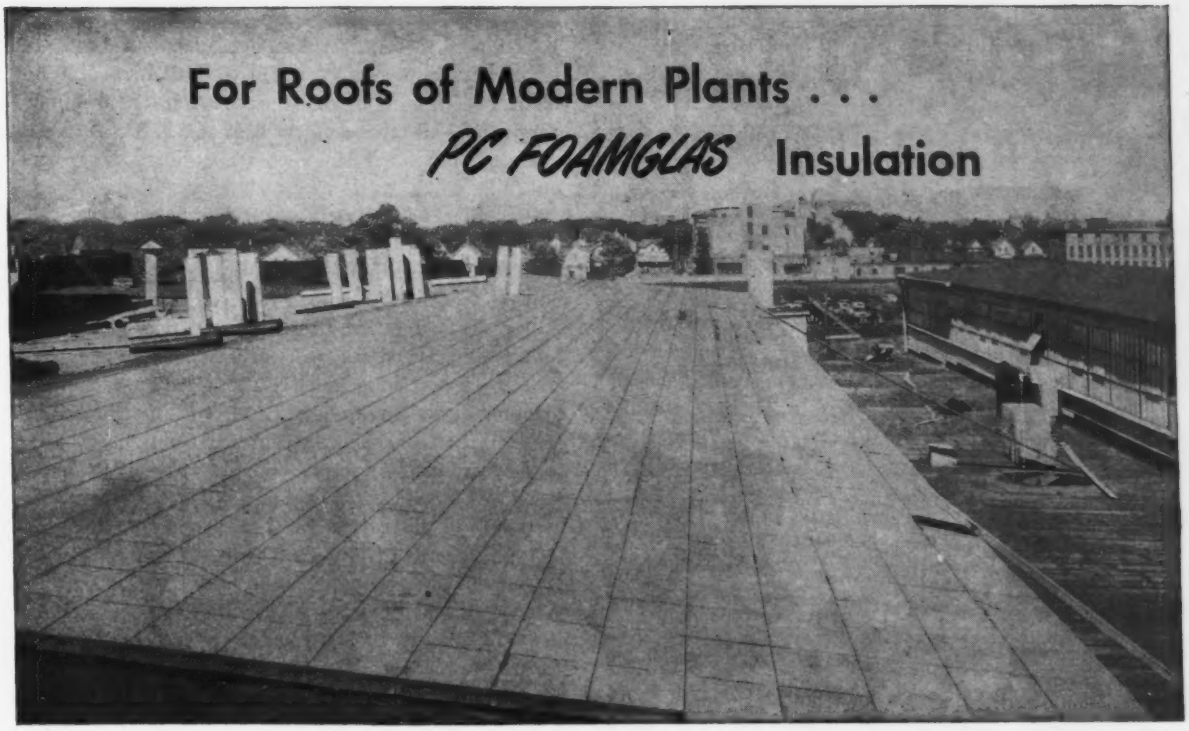
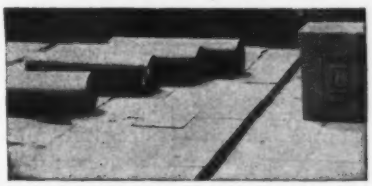
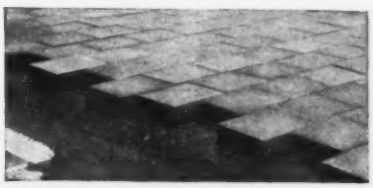


The roof of this building is being insulated with PC Foamglas preparatory to air-conditioning. This unique insulating material helps to control temperature, to lessen condensation—*permanently*.



This picture shows how PC Foamglas insulation is applied and how roofing is built up. PC Foamglas is laid on the concrete deck in hot pitch or asphalt. Then, in turn, the required number of plies of roofing felt are laid with pitch or asphalt, and, if required, gravel finish is applied. All sorts of flat deck roofs, on all sorts of buildings, all over the country, have been insulated — for good — with PC Foamglas.



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PAPER TRADE JOURNAL

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W. L. Cook, Editor

Canada and Paper

An industry which has selflessly provided the basic material for other industries to record their achievements and their grandeur all these years, has set down in a series of concisely phrased pages something of its own importance to the world in which it supports a more than passive share of national responsibility. To the Canadian Pulp and Paper Association must go laurels of the week for its admirably condensed, tersely told story of the size, the history and the national significance of the companies and the mills which turn Canada's great national wealth, her trees, into the stuff on which thoughts are set down for others to read, on which daily news is distributed across a nation and on which history is written for the benefit of those who come later. Until the recent advent of radio communication paper supplied the only convenient means of the most fundamental of all the arts, communication. Paper still is needed—thousands of tons of paper—for disseminating news, for recording events. This fact may well underlie, and help an understanding of all the other facts which Canada may offer in evidence.

Of all the peacetime Canadian manufacturing industries, pulp and paper stands first in employment; first in total wages paid; first in export values; first in the net value of production; and first in capital invested. In newsprint paper alone, Canada has a mill capacity of over 4¼ million tons a year, four times greater than that of any other country. Some 94 per cent of her newsprint output is exported. In the production of woodpulp, Canada is second only to the United States. In prewar years, Canada was responsible for two-thirds of the world's newsprint export trade. Canada supplied 3 of every 8 newspaper pages printed throughout the world. She now provides more than half the newsprint production of the world.

Normally pulp and paper accounts for from 14 to 24 percent of the value of the annual exports of Canada. Its exports far exceed wheat, motor cars, or meat. In 1944 pulp and paper exports to the United States alone were more than double the value of the total gold production of the Dominion. Excluding the war years, fluctuations in the national income closely parallel variations in pulp and paper production. The ups and downs in Canadian exports also closely follow the trend of pulp and paper exports. Prosperity in the industry and in Canada are inseparable.

Pulp and paper is the largest individual industrial buyer of goods and services in Canada. In 1944, the industry's purchases exceeded $176 million and included $70.5 million for transportation, $21.6 million for fuel, $15.7 million for electricty, $34.6 million for chemicals and mill supplies, $6.6 million for fibers and fiber stock, and an estimated $8 million for food and fodder and $19 million for purchased pulpwood. The sums paid to workers run to an estimated $150 million annually. Mill workers receive $75.8 million, and workers in the woods receive an estimated $75 million. No manufacturing industry pays more. No industry has been freer of strikes. No industry has a better labor-management relations record. Generally throughout the mills wages and working conditions are governed by collective agreements.

In hydro-electric power, Canada is the second nation in the world. During the past 25 years the needs of pulp and paper have been largely responsible for the development of Canadian hydro-electric resources. Normally pulp and paper mills use 50 percent of all the power generated for industry and mining.

There are some 82 pulp and paper companies in Canada, some large, some small, operating 108 mills in six provinces. In addition to pulps and newsprint, they have a highly developed production of fine paper, wrapping paper, tissues, paperboard, and other cellulose products.

The part of the industry meeting the domestic demand for paper and paperboard to the extent of some $90 million annually ranks with the larger manufacturing groups in Canada and produces 800 varieties of paper and board.

In the gross or net value of its production the pulp and paper industry has headed the list of Canadian peacetime manufacturing industries since 1923. In 1944 the industry used pulpwood valued at $104 million and converted it into products having a gross value of $370 million. The industry thus multiplies almost fourfold the value to Canada of its pulpwood cut. Including woods operations, pulp and paper produces employment for more than 200,000 workers; helps directly to provide a livelihood for some 500,000 Canadians; and indirectly supports hundreds of thousands more as one of the chief buyers of transportation, power, fuel, supplies, and equipment.

The capital invested in pulp and paper at the outbreak of war more than doubled that of the next largest manufacturing industry in Canada. Pulp and paper represents the savings of many thousands of

Calendar of Coming Events

September 26-28, 1946—TAPPI General Fall Meeting, Hotel Statler, Detroit, Mich.

October 2-4, 1946—TAPPI Engineering Conference, Pfister Hotel, Milwaukee, Wis.

October 17-19, 1946—National Paper Trade Association. Fall Convention, Edgewater Beach Hotel, Chicago, Ill.

Canadians who, over the years, have received few dividends.

In the war years, Canadian exports of pulp almost tripled. These export pulp markets are worth more than $100 million annually to Canada. Paper exports are worth another $175 million. Every Canadian has an interest in the maintenance of these markets. The pulp and paper industry has made its own way against world competition: without subsidies, price floors, guarantees or other forms of public financial assistance. The industry has at times disappointed investors but, in war or peace, it has always been a contributor to, and never a drain on the public treasury. Canada has no better asset, nor any worth more care.

The four great sources of Canadian wealth are forests, farms, minerals, and water power. The industry uses the water power to convert the forest crop into dollars of national income chiefly obtained from abroad by exports, and chiefly paid out in wages. Of the average annual demands on the forests in the ten years ending 1943, pulp and paper mills accounted for 16.7 percent, fuelwood for 22.6 percent, pulpwood exports for 4.1 percent, and lumber and miscellaneous products for 30 percent. The devastation caused by fire, insects, and disease accounted for 26.6 percent.

With an investment of some $700 million in plants which cannot be moved and which cannot operate without pulpwood, and as the largest lease-holder of Crown woodlands, pulp and paper has a vital interest in the maintenance of the forests and in their conservation for future use.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks — 1946		Corresponding Weeks—1945	
May 25	99.2	May 26	92.0
June 1	96.3	June 2	87.9
June 8	104.0	June 9	92.8
June 15	104.0	June 16	91.5
June 22	106.2	June 23	90.4
June 29	*105.5*	June 30	88.8

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1945	86.7	89.4	90.2	88.1	89.8	91.2	80.8	88.6	90.2	95.9	95.5	91.0	89.7
1946	94.7	98.4	104.4	102.7	100.7	*104.6*							

COMPARATIVE YEARLY SUMMARIES

	1939	1940	1941	1942	1943	1944	1945	1946
Year to Date	79.5	87.2	92.7	97.9	88.3	88.6	89.0	100.6
Year Average	83.4	85.6	97.4	90.4	87.8	88.1	89.7	

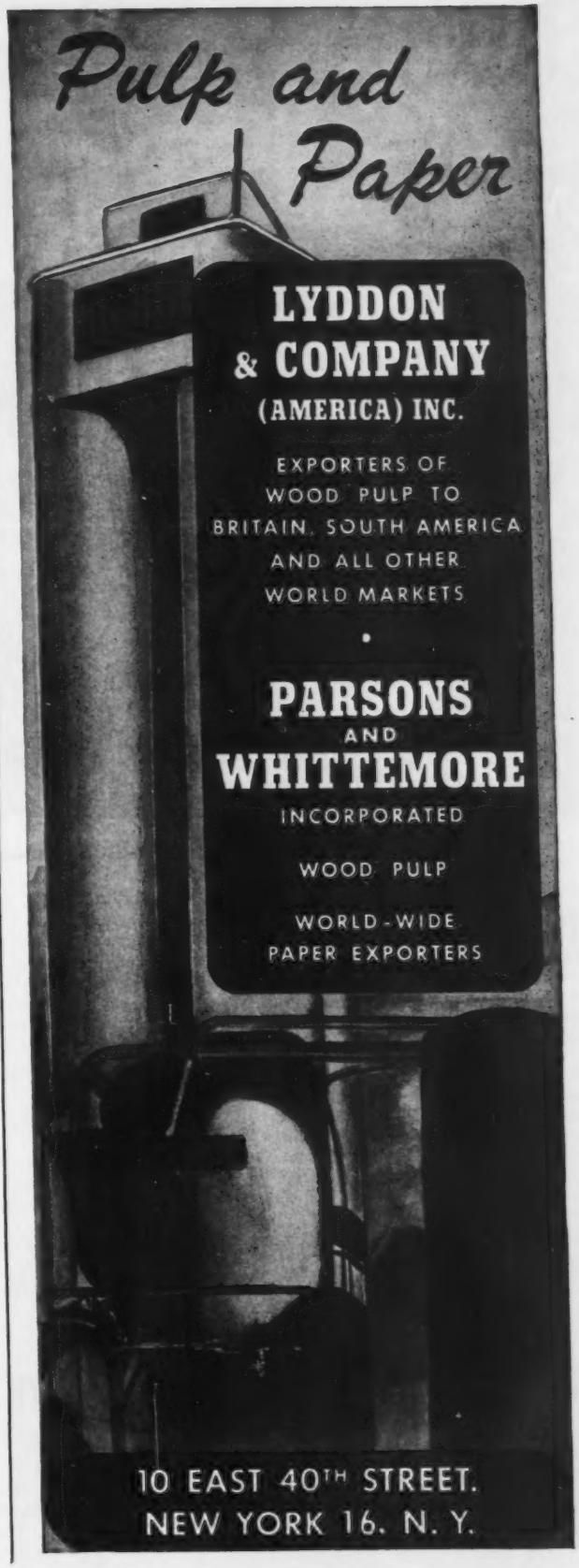
PAPERBOARD OPERATING RATIOS†

Current Weeks—1946		Corresponding Weeks—1945	
May 25	93	May 26	97
June 1	85	June 2	93
June 8	96	June 9	97
June 15	98	June 16	96
June 22	97	June 23	96
June 29	*98*	June 30	96

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1945	91	95	97	97	96	96	86	90	91	97	95	85	93
1946	90	97	100	99	94	*97*							

*Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

†Percents of operation based on "Inch-Hours" reported to the National Paperboard Association.



IMPROVED, economical water resistance in paper and paper boards is imparted by the addition of both rosin and wax sizes during the course of stuff preparation. This sizing method gives safe paper machine operation, and in some instances even facilitates production.

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ALWAX and WAXINE Sizes in the beater supplementing rosin size produce:

1. Water resistance at a low cost.
2. Improved lactic acid resistance.
3. Enhanced finish and folding qualities.
4. Better printing surface with reduced chance of "offset".
5. More dimensional stability with varying humidities, thus alleviating misregister on printing.

ALWAX and WAXINE Sizes at the Tub or Calenders:

1. Produce high surface water repellency.
2. Improve finish and lay fuzz.
3. Impart smoother printing surfaces, especially for glass inks and varnishes.
4. Give scuff resistance to wall board, boxboard, etc.
5. Assure uniform surface dyeing.
6. Give resistance to blood penetration, as in butcher's paper.

Cyanamid also offers a complete range of rosin sizes from gum or wood rosin, including pale grades for light-colored papers and other more economical grades for use where color considerations are secondary. Pale wood rosin size, comparable in color to high grade gum size, is now produced, bringing to the paper manufacturer, the much-sought-after advantages of exceptional cleanliness and uniformity and efficient paper machine performance.

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Edited by R. G. Macdonald, Secretary

The Ring Type Hydro Barker*

By Joseph E. Holveck[1]

Abstract

The construction and the operation of the ring type hydro barker are described.

Some of the advantages for this type barker are: a. Suitable for logs of any diameter and length; b. Logs conveyed longitudinally through barker ring simplifying installation at any location between log and chipper for a pulp mill or ahead of the carriage saw in a lumber mill; c. Has unlimited capacity for large production mills; d. Utilizes hydraulic power efficiently—nozzles open only as long passes through jets; e. Normal logs up to 36 inches are barked in one pass—logs 37 to 60 inches are barked in two passes; f. Simple control of barker and log conveyor —flexible to meet all conditions of abnormal logs; g. Bark logs clean and comparable with other hydraulic barkers; h. Subject to minimum maintenance cost; and i. Requires a minimum number of men for complete operation.

A recent achievement in the timber industry has been the development of direct hydraulic application for the removal of bark from logs.

In the pulp wood division of the industry this development has effected savings up to 20% in the cost of wood depending upon the quality of the pulp being manufactured and existing methods of removing the bark.

In the lumber division of the industry, hydraulic barking also claims advantages of upgrading the product of the lumber, eliminating waste, and reducing labor.

Hydraulic barking has taken prominence not only through its influence in savings of cost of the timber, but also because of its importance in the conservation of timber thereby substantially increasing the potential life of the timber reserves.

The ring type hydraulic barker developed in collaboration with the engineers of the Soundview Pulp Company, Everett, Washington, was designed primarily for the large production of 40,000 to 50,000 board feet per hour and for logs up to 60 inches diameter and 20 to 32 feet in length.

The development of the Worthington Hydro Barker is the result of extensive experimentation in the research laboratories of Worthington. It represents a combination of basic hydraulic principles resulting from experience gained in other fields of similar application such as hydraulic descaling of steel, decoking coke chambers, and other uses.

While the type of barker described in this paper applies mainly to the large logs encountered on the West Coast, many of the same principles are being utilized in a small log barker now being built. This new barker is designed to meet the requirements of the pulp industry east of the Rockies where smaller diameter timber prevails.

Barker Construction

The barker with the ring and nozzle assembly, paralleling device, press rollers, and conical conveyor rolls, is shown in Fig. 1.

Basically the barker offers a ring and nozzle assembly made up of three equal 120° segments. The log to be barked is conveyed through the center of the ring in a longitudinal nonrotating manner. The bottom segment is stationary conforming to the relatively constant under surface of all sizes of logs conveyed through the ring. The other two segments, right hand and left hand, are movable radially and provide for adjustment of the complete ring to conform to various sizes of logs up to 60 inches or more in diameter.

The positioning of the right hand and left hand segments is such that the relationship of each segment with its assembly of nozzles, as to distance and jet pattern to the log surface, is the same for all three segments and for all log diameters.

Movement of each of the two segments is obtained hydraulically by means of the pressure in the barking system and controlled through a common hydraulic valve. To insure equalized and synchronous motion and positioning of both segments an arrangement of steel cables interconnected through sheaves is utilized.

Positioning of the movable segments is also accomplished electrically by master switch lever No. 2 (29) shown in Fig. 2. The movement of this lever to any given log size indicated automatically causes the segments to assume the correct position for that particular log. Segments may be moved freely with nozzles open or closed.

There are 36 nozzles in the ring assembly, each nozzle is integral with a valve and the flow through the valves and nozzles is automatically controlled. The number of nozzles in action is always proportionate to the diameter of the log barked and only the necessary number of nozzles, required for complete coverage of the surface of the log, are used. The required nozzles are selected electrically by

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

[1] Worthington Pump and Machinery Corp., Harrison, N. J.

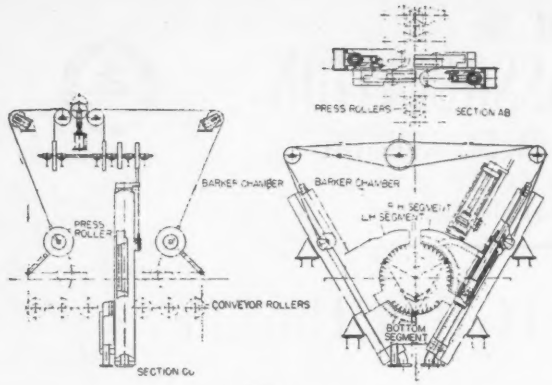

FIG. 1
General Assembly

means of master switch No. 3 (24) shown in Fig. 2. The operation of this drum switch is accomplished mechanically by attachment to the movable right hand segment.

The flow of water through the nozzles is controlled electrically by maintaining finger pressure on the trigger switch mounted on master switch lever No. 1 (34) shown in Fig. 2. The nozzles are open and high pressure water flows only during the time the log passes through the barking ring, which feature, in conjunction with the qualified number of effective nozzles used, conserves water, and power. The control and operation of the spray valves is such that their opening and closing is free from detrimental shock to the hydraulic system.

The hydraulic barker achieves complete barking of all logs up to 36 inches diameter in one pass. Logs above 36 inches and up to 72 inches diameter require two passes. Since the number of logs in these large sizes comprises only a small percentage of the normal run of logs, it is more economical from the standpoint of machine design to utilize the two-pass arrangement. Because of the relative larger volume of wood in these big logs, ample time is available for the additional period required for complete barking. This particular operation requires that these extreme sizes be rotated 60° between the first and second passes. A rotating device is provided for this purpose and installed in the entry conveyor rolls. The log rotator is manipulated by a foot switch and is also employed to position abnormal logs for more favorable longitudinal conveyance through the barker. The rotator comprises two pairs of rotating trunnions located in the entry conveyor roll assembly which are moved into engagement with the log, when required by means of air cylinders.

An equal number of jets in all segments is always applied and their combined action is such that the resultant forces produced by their impingement on the log are balanced both radially and rotatively. However, abnormal logs have a slight tendency to unbalance these forces and for this purpose two press rollers, one on each side of the ring, are used to counteract this inclination. Each press roller consists of two large truck tires sufficiently weighted and also slightly spread so as to straddle the log. The movement of these press rollers is also synchronized with the positioning of the movable segments allowing the tires to automatically roll freely on top of the log.

Figures 2 and 3 illustrate a general schematic assembly of all pertinent items involved in the ring type hydraulic barker. This layout of the hydraulic system exemplifies the use of a hydro-pneumatic accumulator functioning in combination with the pumps. The system offers an efficient central hydraulic generating plant for meeting the characteristic variable water and power demand of a barker unit.

Operation

The barker though originally developed and designed for a pulp mill was also projected to answer the requirements of the timber division as well. This primarily called for a barker capable of removing bark from logs of any length from 16 feet up to 60 feet or more.

For large diameter logs, the method of applying the hydraulic jets involved the following other equally important consideration: (a) adherence to the practical application of hydraulics; (b) avoidance of special log handling necessitating complicated machinery and incidental maintenance; and (c) harmonizing the conveyance through the barker, conforming to standard wood mill practice.

The barker meets all these qualifications in the removal of bark.

The logs, as they are segregated from the raft in the pond, are normally conveyed into the mill in haphazard sizes as to diameters. This results in a sequence of irregular diameters ranging between minimum and maximum sizes in passing through the barker. Since the quantity and rate of high pressure water for thorough barking varies directly as the diameter, the hydraulic supply system must also vary. This calls for a hydraulic generating plant capable of meeting this variable demand and for this purpose an accumulator is used.

The accumulator as shown is a hydro-pneumatic, air bottle type. Any number of bottles can be used, from one up, depending upon the air volume necessary to give the useful water displacement required. A small booster type air compressor is supplied to

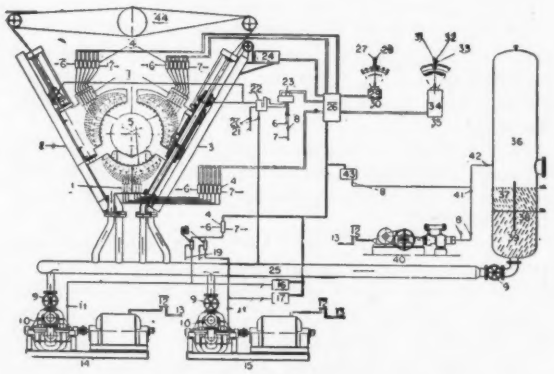

FIG. 2
General Control Outline of Barker Units

1—Two-Way Hydraulic Valves, Air-Operated. 2—Left Hand Segment. 3—Right Hand Segment. 4—Three-Way Air Valve Solenoid Operated. 5—Spray Nozzles Hydraulic Operated. 6—Air Exhaust. 7—Air Supply. 8—Air Glove Valves. 9—Hydraulic Gate Valve. 10—Hydraulic Check Valve. 11—Hydraulic Globe Valve. 12—Motor Starting Box. 13—To Electric Supply. 14—Centrifugal Pump A. 15—Centrifugal Pump B. 16—Pump A. 17—Pump B. 18—Hydraulic Bypass Valves Air Operated. 19—To Waste. 20—Hydraulic Globe Valves. 21—Water Exhaust. 22—Three-Way Hydraulic Valve Air Operated. 23—Four-Way Air Valve Double Solenoid Operated. 24—Master Switch No. 3. 25—Hydraulic Manifold Pipe. 26—Electricity Control Panel. 27—P.B. For Log Transfer Conveyor. 28—P.B. For Log Transfer Conveyor. 29—Master Switch No. 2. 30—Segment and Nozzle Selector. 31—P.B. Stop No. 1 Conveyor. 32—P.B. Stop No. 2 Conveyor. 33—Finger Switch Jet Control. 34—Master Switch No. 1. 35—Conveyor Control. 36—Accumulator Air. 37—Accumulator Displacement. 38—Gage Glass. 39—Water. 40—Air Compressor Booster. 41—Air Check Valve. 42—Air Relief Valve. 43—Low Pressure Governor. 44—Segment Equalizer.

originally charge the vessel and to replenish air lost in evaporation.

The function of the accumulator is based on the expansion of the compressed air between a high and lower pressure, displacing an equal volume of water which is used to augment the flow from the pumps. This accumulator displacement is replaced by the pumps during the shut off period of the spray valves. The time of the shut off period is provided for in the operating cycle of the unit.

The accumulator requires no maintenance and its function is fully protected at high pressure by the limits of the pump discharge at zero flow and at the low pressure by automatic shut off of the spray valves. This automatically confines the operation of the accumulator between the limits of the operating pressures without attention, excepting that of charging.

The accumulator in conjunction with the shut off spray valves enable the selection of the pumps, based on the average demand, thereby avoiding pumps of excessive capacity and eliminating peak power demands. In this installation peak water demands of as high as 250% may be encountered and which are ironed out by the accumulator. This enables the selection of pumps and connecting motors to be based on the average and not the peak demand. Excessive generating capacity in the pulp mill power plant is avoided, or with purchased power, peak electrical demands are eliminated.

The barker is contained in a steel sealed chamber with baffled entry and delivery openings for the logs, and drainage opening in the bottom for the expended water and loose bark.

The central hydraulic generating plant for the Soundview mill was selected for a barking demand of a minimum of 40,000 board feet per hour and for an average log of 18 inches top diameter. To meet these specifications, an average flow of approximately 1500 g.p.m. is required at an average pressure of 1150 p.s.i. Two pumps were installed each having this capacity, thereby providing for 100% over capacity to meet variable operating conditions. Each pump is powered by a 1250 h.p. motor and with present water supply conditions requires an input for this average demand of 875 kw. per pump.

Normal logs are barked at an average speed of 180 feet per minute and provision is made in the conveyor controller for a lower or higher speed depending upon the nature of the bark.

Full control of the barker is maintained by two controllers, master switches Nos. 1 (34) and 2 (29).

Master switch No. 1, manipulated by a hand lever, has two thumb push buttons mounted thereon for controlling the speed and direction of the log. The finger switch also mounted on the lever, controls the opening and closing of the spray valves.

Master switch No. 2, also manipulated by a hand lever, positions the right and left hand segments for the size log to be barked. This lever movement likewise selects the proper nozzles for the log. The two thumb push buttons maneuver the logs on the transfer table and onto the conveyor rolls for conveyance through the barking ring.

The new wood mill for this plant has not yet been completed nor has the new 150 inch chipper been installed. All the logs now barked are passed through the old mill to the present chippers, thereby limiting the capacity of the barker and requiring 24 hours per day operation. For the present, therefore, the barker

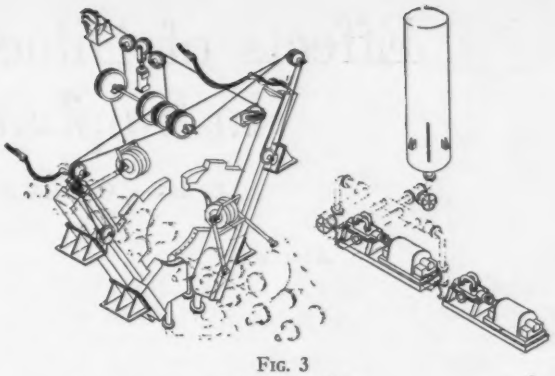

FIG. 3
Outline Plan View

plant is required to operate inefficiently from a power standpoint and will continue under these conditions until the new chipper is installed the early part of the present year.

In the final operation this installation will bark the required 500,000 board feet per day in 12 to 16 hours.

The present operating situation precludes accurate working data at this time. However, since the barker was started early in September, sufficient knowledge has been acquired to substantiate its economical value in the pulp and timber industry.

Acknowledgment

Acknowledgment is made to Messrs. Leo S. Burdon and J. H. McCarthy of the Soundview Pulp Company for their assistance and collaboration in the development of this Worthington Hydro Barker (patent applied for).

Modern Organic Finishes

The Chemical Publishing Company has recently issued Modern Organic Finishes by Rollin H. Wampler, Technical Director of the Southern Varnish Company (452 pp. 5½ x 8½). Although the author's experience has been largely in the paint industry he is evidently conversant with a wide range of application of coatings in many industries, including paper manufacture. One chapter is devoted to finishing paper, cardboard and fabrics.

The book is primarily one of methods. Throughout, the main emphasis is on proper selection and use of materials and equipment to get the best possible result at a minimum cost.

Copies may be obtained from the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y. at $8.50 per volume.

TAPPI Collective Bibliography

Recently a form was sent to all members of the Technical Association that provided an opportunity to order a copy of the Bibliography of Papermaking 1936-1945. More than 1000 requests have been received, but since it is possible that some members may not have returned the form this notice provides an opportunity to make such requests by letter. Nonmembers of the Association may obtain copies at $10.00 per volume. Requests and orders should be sent to the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y., before August 1st.

Effects of Diluent Black Liquor In Sulphate Pulping*

By Henry C. Crandall[1] and G. F. Enderlein[2]

Abstract

The effects of black liquor on sulphate pulping were studied by means of a number of experimental digester cooks in which the black liquor content was varied over the range 0 to 75% of total liquid volume. Total active chemical charged to the digester as black and white liquors was determined and maintained as a constant, as were all other conditions of concentration and cooking procedure.

Results indicated that cooking efficiency in excess of that normally expected, is obtained by partial substitution of active alkali in black liquor for equivalent active alkali in white liquor. Maximum efficiency as shown by lowest permanganate number and screenings, was obtained when approximately 60% of the total liquid volume in the digester consisted of black liquor. Some possible reasons for this occurrence are discussed.

The practice of adding substantial amounts of black liquor to the charge of chips and white liquor in a sulphate pulp digester is standard practice in the industry generally. There are some very good and obvious reasons for doing this. It serves as a diluent for the concentrated white liquor, it provides uniform liquid volume for circulation and thus promotes the uniformity of the reaction, it eases the strain on the evaporating equipment, conserves heat, and makes it possible to blow the digester clean.

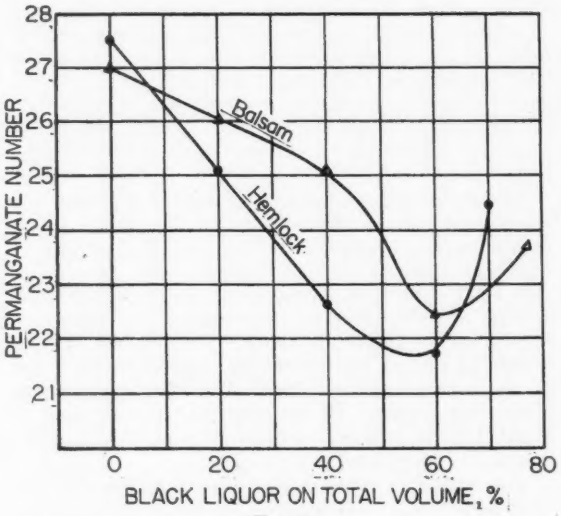

FIG. 2
Effects of Black Liquor Concentration on Permanganate Number

During the course of investigations into some of the numerous variables influencing sulphate pulping, it was observed that when the usual diluent black liquor was left out and replaced by an equivalent volume of water, the alkali requirements for satisfactory pulping increased above the active alkali content of the black liquor. It therefore appeared desirable to investigate further in order to determine what effects this black liquor was having on the pulping process.

Relatively little is found in the literature referring to this particular aspect of black liquor utilization. Haegglund and Schollin-Borg *(1)* report that with all other conditions the same, speed of cooking reaction is faster when black liquor is added than when white liquor is used alone, also that yields and strength are not influenced by the addition of black liquor up to 50%. On the other hand, it is noted by Sutermeister *(2)* that claims have been made as to the catalytic effects of black liquor, but actual experiments which definitely prove such a phenomenon are lacking. According to Wells and Arnold *(3)* black liquor has a beneficial effect as a preliminary impregnant in sulphate pulping, because of the action of the organic salts present as buffering agents and in maintaining even distribution of active chemical. No claims are made in this latter work for any unusual activity of the alkali present.

In an attempt to clarify the matter, an experimental cooking program was instituted with three objectives in mind:

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

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[2] Member TAPPI; Chief Chemist, Mosinee Paper Mills Co., Mosinee, Wis.

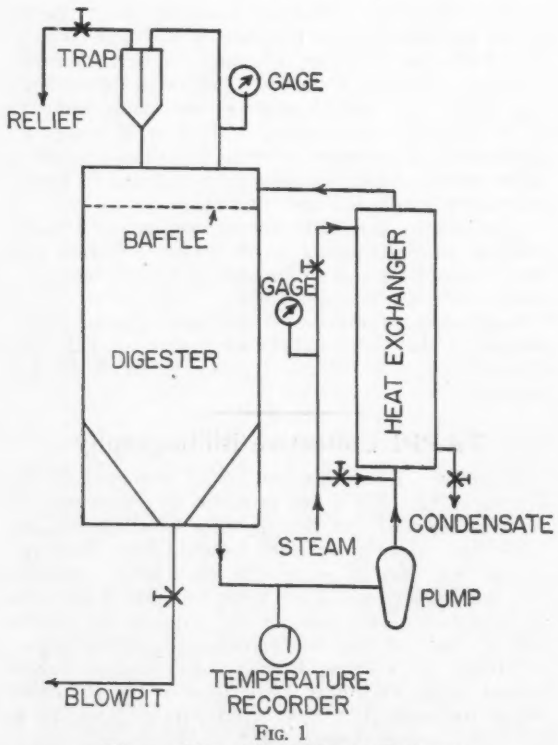

FIG. 1
Diagram of Experimental Digesting Equipment

TABLE I.—DETAILS OF COOKING DATA

Cook No.	Species	Wood: Wet Chips, pounds	Wood: Moisture, %	Wood: Moisture-free Chips, pounds	White Liquor [1]: Active Alkali, grams/liter	White Liquor [1]: Grams Used	White Liquor [1]: Sulphidity	Black Liquor [1]: Active Alkali, grams/liter	Black Liquor [1]: Liters Used	Black Liquor [1]: % of Liquid Volume	Black Liquor [1]: Grams Used	Black Liquor [1]: Active Alkali After Cook, grams/liter	Chemical Charge, grams Na_2O	Ratio of Na_2O to Wood	Water in Chips, liters	Total Liquid Volume, liters [2]	Cycle Minutes: To 350° F.	Cycle Minutes: At 355° F.	Cycle Minutes: Relief Period	Cycle Minutes: Total Cycle Length	Permanganate Number	Averages: Permanganate Number	Averages: Screenings, %	Averages: Yield, %
1	Balsam	18.80	24.5	14.2	121.5	1250	24.1	0	0	0	0	5.6	1250	19.4	2.087	49.3	90	45	10	145	27.0	27.0	4.4	45.5
2	Balsam	18.68	24.0	14.2	123.4	1250	23.8	0	0	0	0	6.2	1250	19.4	2.032	49.3	90	45	10	145	27.0			
3	Balsam	17.98	21.0	14.2	127.7	1194	25.9	0	0	20.2	56	6.2	1250	19.4	1.715	49.3	90	45	10	145	26.3	26.15	3.7	43.8
4	Balsam	19.70	28.0	14.2	125.9	1194	25.1	5.6	10	20.2	56	6.2	1250	19.4	2.495	49.3	90	45	10	145	26.0			
5	Balsam	19.70	28.0	14.2	117.2	1138	21.9	5.6	20	40.5	112	6.2	1250	19.4	2.495	49.3	90	45	10	145	25.2	25.2	3.7	43.0
6	Balsam	19.70	28.0	14.2	122.8	1138	25.9	5.6	20	40.5	112	6.2	1250	19.4	2.495	49.3	90	45	10	145	25.2			
7	Balsam	17.53	19.0	14.2	123.4	1083	24.8	5.6	30	60.9	168	6.2	1250	19.4	1.511	49.3	90	45	10	145	22.5	22.5	3.3	41.9
8	Balsam	17.53	19.0	14.2	124.0	1093	26.6	5.6	30	60.9	168	6.2	1250	19.4	1.511	49.3	90	45	10	145	22.5			
9	Balsam	18.42	23.0	14.2	126.5	1032	25.1	5.6	39	79.0	218	6.2	1250	19.4	1.914	49.3	90	45	10	145	23.9	23.85	4.4	42.7
10	Balsam	19.19	26.0	14.2	126.5	1008	25.1	6.2	39	79.0	242	6.2	1250	19.4	2.268	49.3	90	45	10	145	23.8			
11	Hemlock	28.98	51.0	14.2	120.9	1350	28.4	: :	: :	0	0	6.0	1350	21.0	6.704	49.3	90	45	10	145	27.5	27.5	2.6	44.0
12	Hemlock	30.19	53.0	14.2	120.3	1350	29.5	: :	: :	0	0	6.0	1350	21.0	7.253	49.3	90	45	10	145	27.5			
13	Hemlock	29.59	52.0	14.2	120.3	1294	28.5	5.6	10	20.2	56	6.8	1350	21.0	6.981	49.3	90	45	10	145	25.2	25.1	4.5	44.2
14	Hemlock	29.59	52.0	14.2	119.0	1294	30.8	5.6	10	20.2	56	6.8	1350	21.0	6.981	49.3	90	45	10	145	25.0			
15	Hemlock	28.40	50.0	14.2	114.1	1239	28.8	5.6	20	40.5	112	5.6	1350	21.0	6.441	49.3	90	45	10	145	22.8	22.6	2.2	43.6
16	Hemlock	28.40	50.0	14.2	114.7	1239	25.6	5.6	20	40.5	112	5.6	1350	21.0	6.441	49.3	90	45	10	145	22.4			
17	Hemlock	28.40	50.0	14.2	119.0	1200	27.8	5.0	30	60.9	150	5.6	1350	21.0	6.441	49.3	90	45	10	145	21.9	21.8	2.8	43.0
18	Hemlock	28.40	50.0	14.2	117.8	1200	27.0	5.0	30	60.9	150	6.2	1350	21.0	6.441	49.3	90	45	10	145	21.7			
19	Hemlock	29.29	51.5	14.2	144.5	1175	27.2	5.0	35	71.0	175	5.6	1350	21.0	6.845	49.3	90	45	10	145	24.4	24.5	3.2	43.9
20	Hemlock	28.98	51.0	14.2	150.0	1154	26.5	5.6	35	71.0	196	5.6	1350	21.0	6.704	49.3	90	45	10	145	24.6			

[1] Calculated as grams Na_2O.
[2] Sufficient water added in all cases to mixture of black and white liquors to obtain this total volume.

1. To determine whether residual active alkali present in black liquor has comparable efficiency to equivalent amounts of active alkali in the form of white liquor.
2. To determine whether black liquor has some sort of obscure "catalytic" effect whereby cooking efficiency in excess of normal expectations might be obtained from a given amount of black liquor active alkali.
3. To observe the effect of varying proportions of black liquor on the physical properties of the resultant pulps.

Experimental Problem

It was necessary that the amount of black liquor used in the cooks be varied so as to cover the entire practical range of concentration. The lower limit would naturally be 0%, where water was entirely substituted for black liquor. The upper limit of concentration was determined by adding the volume of water in the chips to the volume of white liquor necessary for the proper chemical charge and subtracting this from the total liquid volume to be used. In the case of balsam chips with low moisture content, it was possible to establish an upper limit concentration of 79% of the total liquid volume, while with hemlock chips of high moisture content, 70% of the total liquid volume was the maximum obtainable.

Other conditions included the maintenance of total active alkali charged into the digester at a fixed amount. This included the active alkali in the white liquor plus the active alkali in the black liquor. Since previous experiments had shown that the hardest pulp was produced using white liquor and water, it appeared desirable to use these conditions as a starting point. An amount of alkali was selected for these initial cooks which would produce a relatively hard pulp. This would allow the progress of increased black liquor percentages to be shown by the decreasing permanganate number of the pulp.

The mechanics of the cooking operation, such as time, temperature, pressure, and circulation must necessarily be maintained as constant as possible.

Equipment and Procedure

The cooks were all made in a stainless steel experimental digester equipped with circulating pump and heat exchanger, as shown in Fig. 1. The total capacity of the digester and circulating lines is 74 liters, and the total volume of liquid used in all the cooks was arbitrarily set at 49.3 liters or 2/3 of the capacity of the system.

The moisture in the chips was determined by TAPPI Standard Method T 3 m-44, and sufficient chips charged into the digester to give a moisture-free weight of 14.2 pounds which filled the digester up to the baffle plate. By several preliminary cooks, using white liquor and water, the amount of chemical was determined which gave a TAPPI permanganate number of 27.0. This calculated amount of chemical in the form of white liquor was then mixed with a sufficient volume of water to give a total liquid volume of 49.3 liters including the moisture in the chips, and charged into the digester.

The progress of the cook followed by means of a recording thermometer placed in the circulating line between the pump and the digester outlet. The cooking curve desired was first drawn on the recorder chart, and the steam admitted to the liquor heater was so regulated that the recording pen followed the

predetermined cooking cycle. This method of maintaining standard cooking conditions was very successful, as is shown in Table I, where each cook was made in duplicate with almost exact duplication of the permanganate number in every case. The cycle followed, required 90 minutes to reach the maximum temperature of 355° F. which was maintained for 45 minutes. The circulating pump was then stopped, the digester relieved for 10 minutes down to 90 pounds pressure, and blown.

This procedure was followed in all subsequent cooks, in which 0, 20, 40, 60 and 79% (balsam) or 71% (hemlock) was successively substituted by black liquor. Duplicate cooks were made at each concentration, and complete parallel series run on both balsam and hemlock chips. The amounts of black liquor and white liquor initially charged were calculated so that the total active alkali present in the digester from both sources at the beginning of each cook, was 1350 grams Na_2O in the case of hemlock and 1250 grams Na_2O in the case of balsam. The white liquor was analyzed according to TAPPI standard T 624 m-42 and the active alkali in the black liquor according to the method of Griffin *(4)*. It is realized there has been considerable controversy over just what constitutes active alkali in black liquor. At the time these experiments were made, there was no official standard method for analysis, and since Griffin's method gave a satisfactory accounting of the sulphide and caustic content of known solutions, it was deemed adequate for the purpose.

At the conclusion of the cook, the pulp was washed and screened, and yield and screenings data calculated from the moisture-free weights of pulp, screenings, and chips. Permanganate numbers on all resultant pulps were determined by TAPPI Standard T 214 m-42. The pulp from duplicate cooks was mixed and beater runs made on the mixture, using a Valley Iron Works 1½-pound beater. Handsheets were made on a Williams sheet mold and conditioned; tear and bursting strength tests made and plotted.

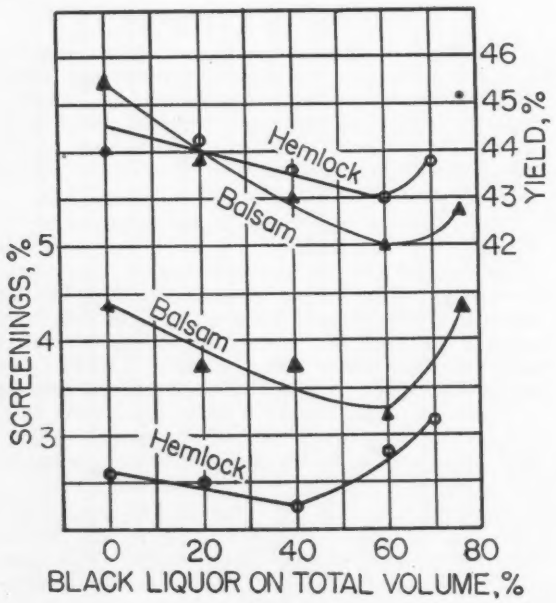

FIG. 3
Screenings and Yield Variations with Increasing Black Liquor Concentration

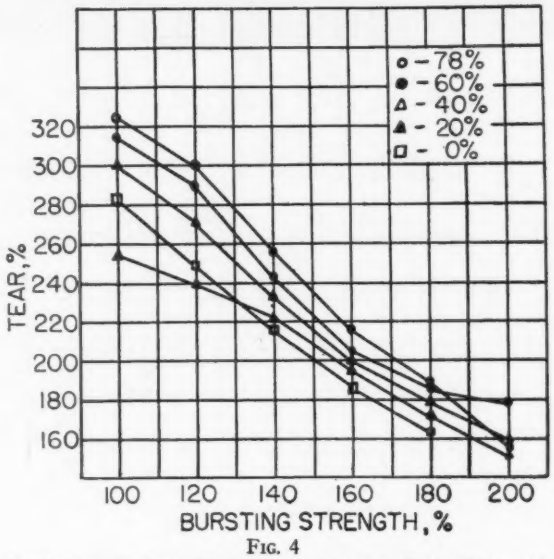

FIG. 4
Comparative Strength Development of Balsam Pulps Made with Various Black Liquor Concentrations

Discussion of Data

Complete cooking data for balsam and hemlock are shown in Table I. Black liquor additions are given in liters, so that with a total liquid volume of 49.3 liters, actual percentages are slightly higher than 20, 40, 60, and 79. For the purposes of generalization, however, the even figures are used.

Average permanganate number, screenings, and yield data are shown in Figs. 2 and 3 for each species of wood and for the entire range of black liquor concentration. There is substantial agreement between the graphs for the different species of wood, both showing progressive decrease in permanganate number, screenings, and yield with successive increments of black liquor up to 60% of total liquid volume, at which point a general sharp rise occurs.

The strength characteristics of the pulp obtained are shown in Figs. 4 and 5 as bursting strength tear ratio curves, in which tear is plotted against burst. Our experience has been that for many purposes, this gives a truer and more ready comparison of pulp properties than conventional beater curves.

The calculated active alkali concentration for the entire series of balsam cooks was 25.3 grams per liter, while for the hemlock cooks it was 27.4 grams per liter. Analysis of the black liquor at the end of each cook showed apparent residual alkali to be essentially the same in all cases. This indicates that the cooking procedure was satisfactorily uniform.

Discussion of Results and Interpretation

As a result of the twenty experimental digester cooks made under the prescribed conditions, the following statements appear to be justified:

1. The active chemical in black liquor not only replaces an equivalent amount of white liquor alkali but appears to produce cooking efficiency in excess of that normally expected.

2. Permanganate number, yields, and screenings reach a minimum when approximately 60% of the total digester liquids consist of black liquor, and then increase.

3. Bursting strength-tear ratio curves show that at 100% burst, tear increases progressively with increased black liquor proportions.

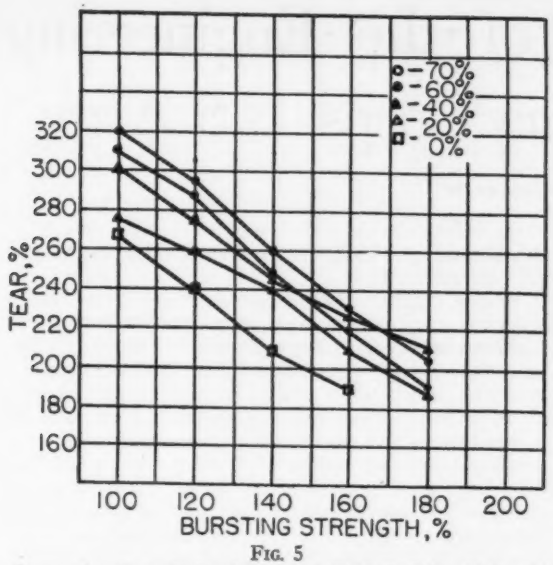

FIG. 5

Comparative Strength Development of Hemlock Pulps Made with Various Black Liquor Concentrations

The fact that the permanganate number of the pulp decreases with added black liquor gives rise to several possible explanations. First, the black liquor may have some sort of obscure catalytic effect during the digesting process. This is regarded as quite unlikely, because of the nature of the reaction and the type of compounds involved. A second possibility is that more alkali may actually be released from highly ionized salts or from readily hydrolyzed organic combination under conditions of heat and pressure than is shown to be present by the analytical procedure. The term "active alkali" is a somewhat arbitrary term designed to distinguish between the NaOH and Na_2S, and other organic or inorganic combinations of sodium which are presumed to be inactive, and probably are, under conditions at the time of testing. Whether these compounds remain inactive under digester pressure and temperature is a question.

However, if active chemical in excess of the calculated amount was actually present in black liquor, the curves in Figs. 2 and 3 would be expected to continue downward rather than curve upward at the higher black liquor concentrations. There seems to be sufficient corroborative evidence from duplicate cooks made on each of two species of wood to show that this break in the permanganate curves actually occurs, and that at approximately 60% concentration of black liquor, optimum efficiency is obtained from the active alkali available according to analysis.

The trend of screenings and yield data as shown in Fig. 3 follows along with the permanganate curve as would be expected. Some of the improvement in screenings may result from more complete impregnation caused by resin soaps in the black liquor, although Kress and Mosher *(5)* find black liquor to be a poor penetrating agent.

The principal conclusion it is desired to present as a result of this experimental work, is that variations in the amount or strength of the black liquor charged to the digester can make appreciable differences in the properties of the pulp. While optimum black liquor concentration may well differ between the various mills, the data presented emphasize that the analysis of black liquor is a factor of potential importance in the control of sulphate pulping variables.

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3. Wells, S. D., and Arnold, K. A., *Tech. Assoc. Papers* 24: 156-159 (June, 1941).
4. Griffin, Roger C., Technical Methods of Analysis, 1st ed., 295-298, McGraw-Hill, New York, 1921.
5. Kress, Otto, and Mosher, Robert H., *Tech. Assoc. Papers* 27: 649-654 (June, 1944).

TAPPI Notes

G. A. Zinkil has been transferred from Carthage, Ind., to the coated board plant of the Container Corporation of America in Chicago, Ill.

Lt. James H. Tate, formerly of the Puget Sound Navy Yard, is now production engineer for the Howard Paper Mills, Inc., Urbana, Ohio.

S. T. Han is now engineer for the National Government of China, Nanking, China.

J. R. Sanborn, formerly of the New York State Agricultural Experiment Station, is now in the Division of Bacteriology, Department of Plant Science, Syracuse University, Syracuse, N. Y.

Theodore J. Gross is now vice president of the Container Testing Laboratories, New York, N. Y.

George C. Dunn is now executive vice president of the Dunn Sulphite Paper Company, Port Huron, Mich.

Roy H. Homans, formerly of the U. S. Maritime Service, is now technical assistant at the Brunswick Pulp and Paper Company, Brunswick, Ga.

Howard L. Winslow, Jr., formerly of the U. S. Army, is now in the research and development department of the American Reinforced Paper Company, Attleboro, Mass.

Edgar Lauring, formerly of the Army, is now a research chemist and supervisor of asphalt treated products development for the Minnesota and Ontario Paper Company, International Falls, Minn.

Roy L. Davis is now general superintendent of the Detroit Sulphite Pulp and Paper Company, Detroit, Mich.

Karl E. Kretlow, formerly of the Pollock Paper & Box Company, is now with the Waterproof-Ohio Paper Company, Columbus 16, Ohio.

Richard J. Murtagh, formerly of the Taggart Corporation, is now paper supervisor for the Individual Drinking Cup Company, Easton, Pa.

Lt. Victor J. Wirpsa, formerly of the Army, is now at Syracuse University, Syracuse, N. Y.

M. D. Reuben, formerly of the York Haven Paper Company, is now production manager of the Paper Drapery Corporation, Mohawk, N. Y.

William D. Kohlins, formerly of the Swenson Evaporator Company, is now manager of the New York District for the Bulflocak Equipment Division of the Blaw-Knox Company, 295 Madison Ave., New York, N. Y.

Paul Torre, formerly of the Corn Products Refining Company, is now sales engineer for the De Zurik Shower Company, Sartell, Minn.

Recent visitors to New York City include: J. Vaclavek and G. J. Hauser, Skoda Works Ltd., Prague, Czechoslovakia; C. F. D. Beuker, Director, Van Gelder Zonen Royal Paper Mills, Amsterdam, Holland; Robert E. Davidson, Albert E. Reed & Company, Maidstone, England; F. S. Mitchell and A. E. Spencer, Titaghur Paper Mills Company, Ltd., Calcutta, India.

War-Time Activities of the Engineering Division and the Sanitary Corps, U.S. Army*

By W. A. Hardenbergh[1]

Abstract

Prior to the beginning of the war emergency in 1940, there was no organized sanitary engineering program for the United States Army. Utilizing the trained personnel of the Sanitary Corps, which later was expanded ten-fold, a sanitary engineering organization was created which operated with the Army all over the world. More than 2,800 technically trained officers were used in this program which included: water supply and purification, waste disposal, malaria control and numerous other activities. Technical control and supervision of the work were maintained through both command and informal channels. Results of the program, which was carried on in cooperation with other agencies were: nonpotable water samples in the United States were reduced to less than 1%, and water supplies overseas were also satisfactorily safeguarded; malaria contracted in the United States was practically eliminated and overseas malaria was no longer a serious handicap to military operations. Control measures were also applied to other tropical diseases, including scrub typhus, hepatitis, plague, schistosomiasis, filariasis, and dengue.

The primary purpose of the Sanitary Corps was the protection of the health of the troops through the provision and utilization of those nonmedical skills which are essential in any sound health program. The function of the Sanitary Engineering Division was to initiate and direct appropriate measures of environmental sanitation, employing most effectively the various nonmedical skills of Sanitary Corps personnel.

Because, by Army regulations, the Medical Department is charged with disease prevention, these activities had to be carried on within the framework of the Medical Department, but the work involved close coordination with many other agencies, both within and without the Army. The Corps of Engineers is responsible for the actual performance of work involving construction required by Medical Department recommendations. However, when airport, road, or other essential construction needs in battle areas required all of the resources and abilities of engineer troops, disease prevention could not wait, and Sanitary Corps personnel had to be ready to carry on. Likewise, in the United States, close cooperative liaison had to exist with the U. S. Public Health Service and with state and local health agencies.

The work of the Sanitary Engineering Division began in the fall of 1940. At that time no one could foresee what might happen but the presence of troops in the Caribbean and the establishment of air bases in South America, and later in Africa, provided a miniature preview of the many serious problems to come. Since the possible scope of operations included most of the unhealthiest areas of the world, it was felt that our organization should be designed to be flexible enough to meet any conditions that might conceivably occur.

At the end of 1940, there were less than half a dozen sanitary engineers on duty. The Sanitary Corps had been wholly a reserve component of the Army and under the Army's prewar policy was a heterogeneous group of skilled and unskilled personnel totalling 503. Of these 96 were qualified engineers or sanitarians, 13 entomologists, and about 200 were trained laboratory personnel. By the middle of 1941 the incapable had been largely weeded out; all qualified men, with few exceptions, were on duty; and new standards had been prepared for the additional officers that were expected to be needed. Under these new standards, all appointees had to have an appropriate college degree and four years of experience. Later, because of the great need for personnel, the experience requirement was reduced to two years. Before the end of the war, the Sanitary Corps totalled 2900 officers, of whom 1000 were sanitary engineers, 250 were entomologists, 1300 were laboratory personnel, and the remaining 350 were other scientific personnel needed in the program.

The officers were mostly young men who had never actually served in the Army. Practically none of the Medical Corps officers, or Corps of Engineer officers either, knew what a sanitary engineer or an entomologist was, or what he could or should do. An early job therefore was the education of both groups, and this was combined with the job of creating a sanitary engineering organization. It was deemed essential that sanitary engineers and entomologists should be placed in all important posts, camps, and stations, and in overseas bases. However, it was realized that their value would be largely lost unless there were a chain of technical supervision or command, reaching from the Sanitary Engineering Division down to the smallest post. Therefore, beginning in 1940, all major commands were contacted personally and by other means and persuaded to request the assignment of sanitary engineers to their headquarters and to the important posts under their direction. In this way an organization was built up which reached through the various intermediate headquarters to all parts of the Army.

This organization was so satisfactory that it remained essentially unchanged throughout the war though by the end of 1944 about 60% of the Sanitary Corps strength was serving outside the United States. Through this organization, the Director of the Sanitary Engineering Division maintained technical supervision of all personnel, either through military channels or directly; but in overseas combat areas, only the most general control, as by the establishment of broad policies, could be exercised. The men overseas were very much on their own. This fact had, to a large extent, been anticipated, and as far as possible all of the men designated for key positions overseas had previously held responsible places in the organization in this country and had demonstrated their ability in sanitary engineering, in Army administration and in the handling of personnel.

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

[1] Editor and Vice-President, *Public Works*, New York, N. Y. Formerly Colonel, U. S. Army, Chief of the Sanitary Corps.

Though Sanitary Corps officers served in every part of the world, from Alaska to Australia, and in Africa, Europe, South America and Asia, their duties fall generally into rather specific lines or fields of work, although the nature of the work varied with location anl local conditions.

Water Supplies

There were in the United States about 1000 separate water supplies serving troops, this number including both army-owned and purchased supplies. The first step in the control of water quality was the formulation, with the Corps of Engineers, of adequate design bases to insure the ability of the plant to produce safe water. All plants, whether Army or municipal, were surveyed by qualified sanitary engineers to determine the existence of sanitary hazards, and the hazards found were promptly corrected. The excellent program developed by the Corps of Engineers for obtaining skilled operators was supported in every way; assistance was also rendered through the assignment of Sanitary Corps specialists where needed in the training program. A comprehensive system of sampling and testing was initiated. When the program started in 1941, nonpotable samples averaged around 13%; during the next year, these were reduced to 4%; and in 1944 and 1945, less than 1% of the more than 200,000 samples taken were nonpotable.

Overseas water supplies presented many problems. The two greatest were, first, a mental defeatism that assumed all water supplies in tropical areas to be unsafe and extremely difficult to treat; and second, inadequacies in personnel and equipment for water supply. The prewar plans never contemplated large-scale operations in Burma, New Guinea, and similar places and it was difficult to remedy quickly these defects in planning. The mental defeatism was not so difficult to overcome; actually, water supplies in the areas mentioned are no more seriously or widely contaminated than those in United States; and since there are few, if any, sewers, the load of pollution in the streams is much less and treatment is actually easier. Greatest difficulty arose with amebic dysentery, mainly because medical officers relied on out-of-date medical texts and refused to believe that modern methods of treatment would remove or destroy the cysts. They generally insisted on boiling the water which promptly became recontaminated because of the Army policy of using natives for distributing the water in the many places where water pipes were not available. Unfortunately, natives were also often used as food handlers.

Inadequacies of organizational water equipment and personnel were especially serious in such theaters as India-Burma, China, Africa, and the Persian Gulf. The great bulk of troops in these areas were supply units which unlike combat troops were not provided with sufficient organizational water supply and treatment facilities. Moreover, though the prewar Army field filters, if properly operated would remove amebic cysts, Army directives did not provide for, nor were personnel trained in, proper operation. It was therefore necessary to develop new operating procedures and to establish a system for training operators in the field; but these men were not permanently assigned, and therefore the personnel turnover was discouragingly rapid. New sterilizing agents and new types of filters were developed and tested for their effectiveness, under adverse field conditions, in the removal or destruction of bacteria, amebic cysts, and the cercariae causing schistosomiasis, and the inactivation of infective hepatitis virus. This developmental work was a joint project enlisting the aid and resources of many agencies.

In general, these problems had to do with troops in the field. For the fixed stations overseas, the same general methods that were used in this country were applied and found effective. Good design, an engineering survey to detect and correct hazards, and good operation resulted in the routine production of safe water.

The results of water treatment overseas cannot be measured so completely by statistics as can those in this country. However, all reports indicate that there were very few outbreaks of waterborne disease of any consequence among the troops overseas, and that during the final year or two of the war practically all of the troops were receiving water that was as safe, if not always as palatable, as that they had received at home; generally it was palatable also.

Waste Disposal

Waste disposal was not a serious problem overseas though the methods used in many of the hospitals and fixed bases were primitive in nature. In the United States, the army built and operated some 400 sewage treatment plants of modern design. The policy of the Sanitary Engineering Division followed that already described for water supply—adequate design standards, inspection by qualified engineers, correction of defects, and good operation. The success of this program can perhaps best be measured by the total absence of complaints regarding nuisance or danger to health received after the initial construction program was completed.

Malaria

Malaria was probably the greatest single hazard to winning the war. As an illustration of how it can influence military operations, it can be estimated that if the troops remain wholly unprotected for one night in a highly malarious area, 20% of them will become sick from malaria; and in two nights, 30%. No army can stand such losses and remain effective. In the early operations in the South and Southwest Pacific, casualities from malaria were 6 to 8 times as numerous as battle casualties.

Trained sanitary engineers and entomologists are essential for malaria control. There were few of either category skilled in this work prior to 1942. Therefore, the program for 1941 and 1942 included practical field training in malaria control for as many of the Sanitary Corps personnel as possible. Early in 1941, a program of malaria control in the Southern training camps was initiated and it has been a continuing project since that has paid tremendous dividends. These dividends have resulted not only from the virtual eradication of malaria contracted by troops in the United States but also from the provision of experienced personnel for overseas duty. The rate for malaria contracted in the United States was reduced to about 3% of the rate during World War I.

This control was accomplished largely by drainage and oiling. Obviously such measures could not be used as the sole means of control in overseas combat areas. Studies of the problem indicated three essentials: (1) the provision of small specialized units to be assigned where, and in the number, needed locally, which could determine quickly the seriousness of the malaria problem and the type and habits of the vector and could quickly apply broad control measures; (2) an organization in each company or similar unit,

usually of two men, to care for conditions within the unit area and to be the malaria conscience of the unit; and (3) individual training in protection against malaria, including the use of repellents, other protective measures, and atabrine.

In carrying out this program, 153 Malaria Control Units and 70 Malaria Survey Units, trained and officered by Sanitary Corps personnel were sent overseas. Every man in the Army received 4 hours of instruction in malaria prevention. In the last year of the war, DDT became available, but the program had already become highly effective without the help of this potent chemical.

As a result of the Army's malaria control program, malaria was no serious handicap to military operations after the middle of 1943, and became increasingly thereafter a routine operation, but one which could never be neglected or slighted without disastrous results.

Rodent Control

The association of plague and war is as old as history, going back certainly to the siege of Troy. There were outbreaks of plague during this war in the areas where troops were located but all were promptly controlled. No cases occurred among American soldiers. In order to be ready for eventualities, rodent control specialists from the Department of Agriculture were commissioned in the Sanitary Corps early in 1942, and were used for ground rodent control in western United States, for training personnel, and as consultants in rodent control in overseas plague outbreaks. Plague is known to exist in both China and Japan, and in preparations for operations in those areas, tables of organization and equipment were prepared for Rodent Control Units, but no units were organized as the Malaria Control and Survey Units proved highly effective in this work.

Other Diseases

Scrub typhus, a dreaded disease of various Pacific areas, was conquered by impregnating uniforms with a chemical harmless to the wearer but deadly to the mites causing the disease. Two Sanitary Corps entomologists were leaders in this work. The skilled personnel of the Malaria Survey and Control Units were used and proved highly effective in combating schistosomiasis, dengue, and filariasis.

Special Problems

Many interesting special problems arose which would require so much time for their discussion that mention only of some of them can be made here. Ship and port water supply was a difficult and complicated problem that was never fully solved, but the Army was fortunate in that there were very few disease outbreaks. The use by the Army of hotels for housing troops created an extremely real hazard, because of the crowding, and consequent overloading of water and sewage piping with the accentuation of danger from cross-connection and back-siphonage. All hotels were surveyed and danger points eliminated. The same procedure was followed with colleges in the Army Specialized Training Program. No waterborne disease outbreaks were reported from either hotels or colleges. The Sanitary Engineering Division cooperated in the protection of the water supplies of essential industries against sabotage, assigning 23 engineers to this work, and it prepared the directives for the protection of camp supplies. It also did the initial work in developing methods for detecting warfare gases in water and for their removal using to the maximum Army standard equipment and materials. Studies were made of methods of water treatment to inactivate hepatitis virus which, it has been shown may be spread by water, and highly satisfactory results were obtained.

Plans were made for sanitary engineering, including water supply, waste disposal, and insect and rodent control for the invasions of many of the Pacific islands. The sanitary engineering phases of military government, as well as the assignment of sanitary engineering and entomological personnel, was another function of the Sanitary Engineering Division. The wastes from various secret Army manufacturing plants provided most difficult problems in treatment.

Preventing the importation into this and other countries of disease bearing insects was a highly important and most difficult job in which the Sanitary Engineering Division and many Sanitary Corps officers participated. There were also questions of methods of protecting citizens against diseases that might be brought back to this country by returning infected soldiers. The formation through the National Research Council of a Sanitary Engineering Committee to develop answers to some of these problems was another project of the Sanitary Engineering Division, as was the study by this committee of operating results of Army sewage treatment plants. Representatives of the division were sent to Germany to study German sewage and industrial waste treatment methods.

This list could be continued almost indefinitely for each day seemed to bring a new opportunity or a new and hitherto unthought of problem. But the war is over, and the principal values for the future lie in the lessons learned and their application to the future needs of the country. Details of technical accomplishments and advances are not yet generally available so that only broad generalizations can now be made. Among these are, first, that nothing is impossible of accomplishment by well-trained men; second, that better engineering training is essential and that it may be desirable to adopt much higher standards of broad technical training than have been deemed necessary in in the past; third, that engineering education is inclined to be too narrow and too specialized on the slide rule, the log table, and the drafting pen; and fourth, that engineers must learn to work more effectively and closely with other sciences—entomology, chemistry, and bacteriology, for instance.

Lest some of these remarks appear to be strictures on what the men of the Sanitary Corps were or did, let the author state that they contributed their full share, and more, in giving the Army of the United States the lowest morbidity rate that any army has ever had in any war.

Physical Methods of Organic Chemistry

Volume II of Physical Methods of Organic Chemistry, by A. Weissberger of the Eastman Kodak Company Research Laboratories, has just been issued by Interscience Publishers, Inc. As in the previous volume this book is made up of chapters written by 27 contributors. The present work was prepared primarily to relieve the chemist of the necessity of reading widely to determine the best physical method to use for a specific job.

Among the subjects covered are: spectroscopy, colorimetry, polarimetry, conductometry, polarography and potentiometry.

Copies may be obtained from the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y., at $8.50 per copy.

Abrasion Resistance of Paper and Paperboard

TAPPI Suggested Method T 476 sm-46

This method provides a measurement of the susceptibility of the surfaces of paper and paperboard used for packaging to the action of standardized abrasive surfaces, either wet or dry. The test gives an indication of the surface wear to be expected when packages are shipped and subjected to prolonged vibration in contact with each other. The method is not applicable to surfaces which are waxed or treated with similar materials that would fill in the pores of the abrasive wheels.

Apparatus

1. *Abrading Instrument.* This shall consist of a horizontal turntable and center clamp which revolves counter-clockwise at 65 to 75 r.p.m., upon which the specimen is attached, and two weighted parallel arms carrying a special abrasive-embedded rubber wheel, freely rotating on a ballbearing horizontal spindle on each arm and each resting on the specimen with a pressure of 1000 grams for the dry test and 500 grams for the wet test. The surface of the table shall be covered with a disk of soft, rubberized material 0.03 inch thick. Each abrasive wheel shall be 1¾ to 2 inches in diameter and ½ inch thick, composed of a special finely screened and standardized abrasive embedded in a medium hard rubber and known as a CS-15 medium calibrase wheel. A revolution counter shall be attached to the table.

For the wet resistance test, a rubber-covered turntable having an annular raised rim shall be used to permit the surface of the specimen to be covered with water during the test.

The lines of contact of the wheels on the specimen shall be at right angles to the parallel supporting arms and situated 1 inch from the center of the turntable towards the axis about which the supporting arms turn, the center of the line of contact of the wheel on the arm to which the turntable revolves being 1¾ inches to the right of the perpendicular from the axis of the arms to the center of the turntable, and the center of the contact line of the wheel on the arm from which the turntable revolves being 1-7/32 inches to the left. In this manner, when in contact with the turning specimen, the two wheels revolve in opposite directions and exert a combined abrasive, compressive, and twisting action over a circular path approximately 10 sq.cm. in area, twice during each revolution of the specimen.

2. *Refacing Turntable.* A rubber-covered turntable on which an abrasive disk is mounted, for resurfacing the wheels.

3. *Brush.* A soft brush about ½ inch wide with bristles about 1 inch long.

This method suggested by the Packaging Materials Testing Committee as being the most suitable to date, is *not*, however a TAPPI Standard. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York 17, N. Y. Reprints of this method can be obtained from the Secretary at 25 cents each.

Calibration

After testing a fiber surface containing fillers or coating, or after each 1000 revolutions, the wheels shall be resurfaced as follows:

With the resurfacing table and disk in position, run the wheels on the surface under pressure of 1000 grams for 20 to 50 cycles, depending on their condition. During the resurfacing operation, continually remove abraded particles from the wheels and disk by blowing or with the brush. Renewal of the wheel faces is indicated by the clearing up of the initial colored track on the abrasive disk.

Test Specimen

The test specimens shall consist of three or more square, octagonal, or circular disks approximately 4 inches across, with a hole in the center to permit clamping on the turntable. For paperboards more than about ⅛ inch thick, especially for the wet test, it may be necessary to split or suitably reduce the thickness of the specimens, taking care not to affect the surface to be tested. For the dry abrasion test, the specimens shall be conditioned for testing according to TAPPI Standard T 402 m.

Unless it is specified which side of the specimen is to be tested, the sides shall be marked A and B, respectively, and results shall be reported for each side separately.

Procedure

1. Dry Abrasion Resistance Test

Make the test in an atmosphere conditioned as in TAPPI Standard T 402 m.

Carefully brush the surface and edges of each test specimen, holding it by the edges, weigh it to the nearest 1 mg. and clamp it in position on the turntable. Reset the counter at zero and carefully lower the wheels on the specimen with a pressure of 1000 grams. Start the test by switching on the motor and allow the test to proceed for a sufficient length of time so that the surface of the test specimen is just completely removed, meanwhile with the brush, and not by blowing, remove accumulated debris from time to time. Note the counter reading, remove the test specimen, and again holding it by the edges, carefully brush off any loose fibers or particles and reweigh. Record the loss in weight in milligrams *(L)*.

2. Wet Abrasion Resistance Test

Thoroughly clean the rimmed turntable and mount the specimen to be tested. Adjust the weight of the arms to 500 grams each and lower them upon the specimen. Reset the counter to zero. Add sufficient water at room temperature to flood the upper surface of the specimen and immediately switch on the motor. Allow the test to proceed for a sufficient length of time so that the surface of the test specimen is completely removed. During this test do not use the

brush or disturb the action of the wheels. Note the counter reading.

Remove the rimmed table and pour off the liquid into a clean beaker or glass dish. Remove the specimen and with a washbottle or gentle jet of water, wash all the loose material from surfaces of the specimen and from the inside of the turntable into the dish and add also any fibrous particles adhering to the wheels.

Filter the liquid and washings on a tared filter paper or a sintered glass or Gooch crucible. Dry at 100 to 105°C. to constant weight. Calculate the milligrams of air-dry material removed *(L)* by dividing the weight in milligrams of the oven-dried material by 0.93. (This is on the assumption that the average air-dry material contains 7% of moisture.)

Report

The average result from a specified side of at least three specimens shall be reported as the abrasion loss to the nearest two significant figures. The abrasion loss is defined as the number of milligrams of air-dry material removed per 1000 revolutions and shall be calculated from the formula

$$A = \frac{1000\,L}{R}$$

where A = Abrasion Loss
L = milligrams of air-dry material removed,
and R = revolutions of turntable.

Reproducibility

The reproducibility of the test is estimated to be plus or minus 10% with ordinary paper surfaces.

Additional Information

1. The abrasion loss of a smooth, well beaten sheet of paper will be less than 100; whereas for a soft, unbeaten sheet it will be 2000 or more.

2. Experiments thus far have not indicated good correlation between the results of this test and the abrasive resistance of case liners when subject to rough handling, both in the wet and dry conditions.

3. The quantity of material removed from the wheels in the wet abrasion test increases the result slightly, but in general, this increase will be insignificant. It may be corrected approximately by determining the ash of the filtered material and the ash of the original paper or paperboard and making the proper adjustment.

New TAPPI Members

Raymond E. Baker, Technical Director, B.F.D. Company, Platsburg, New York, a 1940 graduate of the Institute of Paper Chemistry.

Vernon G. Cornelius, Secretary-Manager, Pulp and Paper Manufacturers Association, Appleton, Wisconsin, a 1933 graduate of the University of Illinois.

Charles W. Dingle, Jr., Sales Engineer, Filtrol Corporation, Los Angeles 14, California, a 1942 graduate of the Newark College of Engineering.

Bruce P. Ellen, Sales Engineer, Oliver United Filters, Inc., New York 18, New York, a 1936 graduate of the North Carolina State College.

Herbert F. Loring, Engineer, Peter J. Schweitzer, Inc., New York 17, New York, a 1924 graduate of Massachusetts Institute of Technology.

Guy R. Lyle, Director of Libraries, Louisiana State University, Baton Rouge 3, Louisiana, a 1927 graduate of Alberta College, and a 1932 graduate of Columbia University.

August Napravnik, Chief Chemist, Catalin Corp. of America, Fords, New Jersey, a 1939 graduate of Lehigh University.

Reinhold A. Vogt, Technical Director, Combined Locks Paper Co., Combined Locks, Wisconsin, a 1932 graduate of Lawrence College.

Allen H. Wolfe, Vice-President, The Huffman-Wolfe Co., Columbus, Ohio, a 1935 graduate of Ohio State University.

Reginald M. Wright, Director, Wright, Learmonth (Pty) Ltd., Pretoria, South Africa. Attended Clifton College U. K.

Richard G. Cohn, Assistant Paper Mill Engineer, Florida Pulp & Paper Co., Pensacola, Florida, a 1941 graduate of the Georgia School of Technology.

John M. Dyer, Superintendent, Fonda Container Co., Inc., St. Albans, Vermont, a 1924 graduate of Wentworth Institute.

William D. Kohlins, Chemical Engineer, Swenson Evaporator Co., 136 Liberty St., New York 6, New York, a 1934 graduate of the City College of New York.

Hugh D. Nickle, Sales Angineer, Combustion Engineering Co., Inc., 200 Madison Ave., New York 16, New York, a 1924 graduate of Massachusetts Institute of Technology.

Paul L. Onasch, Research and Technical Director, Arkell Safety Bag Co., 10 East 40th St., New York 16, New York, a 1935 graduate of the University of North Carolina.

Alfred R. Phillips, 825 East 38th Street, Brooklyn 10, New York, a 1943 graduate of Syracuse University.

David J. Phillips, President, Gilson Brothers, Inc., 100 First St., Brooklyn 31, New York.

Virgil O. Wodicka, Manager, Cereal Research Laboratories, Ralston Purina Co., 835 S. 8th St., St. Louis 2, Missouri, a 1935 graduate of Washington University.

Rashan Lal Bhargava, Supervisiong Head of Paper and Pulp Manufacturing Depts., Upper India Couper Paper Mills Co., Ltd., Lucknow, India.

Jose C. de la Macorra, Technical Director, Papelera Nacional S. A. and Cartonera Nacional S. A., Tlalnepantla, Edo. de Mexico, Mexico, a 1944 graduate of the University of Texas.

Erwin L. Kischel, Technical Director, Alpha Cellulose Corp., Chicago, Illinois.

Philip A. Lamb, Factory Manager, Endura Manufacturing Corp., Quakertown, Pennsylvania, a 1929 graduate of Massachusetts Institute of Technology.

Benjamin D. Levine, 1374 Bronx River Ave., Bronx, New York, recently discharged from the U. S. Navy, a 1943 graduate of New York State College of Forestry.

Douglas A. Newman, Chief Chemist, Columbia Ribbon and Carbon Co., Glen Cove, New York. Attended Columbia University.

Bernard K. Roecker, Manager, Waterproof Paper and Board Co., Cincinnati, Ohio.

Philip R. Rolleston, Chief Paper Control Station Operator, Moore Business Forms, Inc., Niagara Falls, New York. Attended McGill University.

George L. Snyder, Chief Engineer, Lukenweld, Inc., Coatesville, Pennsylvania, a 1935 graduate of Drexel Institute.

William A. E. Tibell, Production Manager, Aktiebolaget Papyrus, Molndal, Sweden, a 1931 graduate ot Royal College of Technology.

Edward C. Whiting, President and Treasurer, Whiting & Company, Holyoke, Massachusetts. Attended Amherst College and Yale University.

Paper and Paper Stock Imports At New York and Other Ports

NEW YORK IMPORTS

WEEK ENDING JULY 6, 1946

SUMMARY

Cigarette Paper .....5 cs.
Newsprint .....8,673 rolls
Painted Paper .....61 bdls.
Fancy Paper .....1 cs.
Decalcomania Paper .....38 cs.

CIGARETTE PAPER

Globe Shipping Co., American Shipper, Havre, 5 cs.

NEWSPRINT

H. G. Craig Co., Inc., G.T.D., Donnacona, Que., 392 rolls.
News Syndicate Co., Colabee, Baie Comeau, Que., 7573 rolls.
H. G. Craig Co., Inc., Kermic, Donnacona, 354 rolls.
H. G. Craig Co., Inc., G.D.D. Donnacona, 354 rolls.

PAINTED PAPER

Hudson Shipping Co., American Shipper, Havre, 61 bdls.

FANCY PAPER

Rohner Gehrig Co., American Shipper, Havre, 1 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Russell R. Jones, Liverpool, 38 cs. Duplex.

RAGS, BAGGINGS, ETC.

Continental Bank Trust Co., Exceller, Algiers, 176 bls. rags.
Chase National Bank, Rapid, Melbourne, 18 bls. wool rags.
Brandwein Mazur Co., Marine Flyer, Bombay, 850 bls. cotton waste.
Riverside Mills, Marine Flyer, Bombay, 556 bls. cotton waste.
New England Waste Co., Marine Flyer, Bombay, 400 bls. cotton waste. waste.
Textile & Paper Supply Corp., Ma-Marine Flyer, Bombay, 296 bls. cotton waste.
O'Brien Products, Inc., Marine Flyer, Bombay, 322 bls. cotton waste.
Schimmel Trading Corp., Marine Flyer, Bombay, 400 bls. cotton waste.
Railway Supply & Manufacturing Co., Marine Flyer, Bombay, 296 bls. cotton waste.
Padawer Co., Marine Flyer, Bombay, 312 bls. cotton waste.
Tradesmans National Bank Trust Co., Russel R. Jones, Liverpool, 40 bls. old blue overalls.
Ayres W. C. Jones Co., Russel R. Jones, Liverpool, 415 bls. cotton waste.
Lounar Textile By-Products, Inc., Russel R. Jones, Liverpool, 80 bls. bagging.
American Express Co., Russel R. Jones, Belfast, 254 bls. paperstock.
Atlas Waste Manufacturing Co., Gripsholm, Gothenburg, 51 bls. woolen rags.
The Heyman Co., Ringleader, Recife, 111 bls. cotton picker waste.
Padawer Co., Ringleader, Recife, 48 bls. cotton picker waste.
Castle & Overton, Inc., Rio Chubut, Buenos Aires, 41 bls. rags; 18 bls. waste.
C. Kutz, Anita, Santos, 262 bls. cotton waste.
Padawer Co., Anita, Santos, 174 bls. cotton waste.
Riverside Mills, Anita, Santos, 202 bls. cotton waste.
Americale Trading Co., Inc., Anita, Santos, 21 bls. woolen threads.
Royal Manufacturing Co., Cantuaria, Rio de Janiero, 89 bls. cotton waste.
American Products Co., Cantuaria, Rio de Janiero, 100 bls. cotton waste.
New England Waste Co., Cantuaria, Rio de Janiero, 264 bls. cotton waste; 76 bls. cotton picker waste.
(———) Cantuaria, Rio de Janiero, 192 bls. cotton waste.

HIDEGLUE

Transatlantic Animal By-Products, Inc., Rio Chubut, Montevideo, 200 bags sheet hideglue; 200 bags ground hideglue.

CASEIN

American Cyanamid & Chemical Co., Mormacswan, Buenos Aires, 10,162 bags ground lactic casein.
J. H. Schroeder Banking Co., Felix Taussig, Buenos Aires, 1000 bags ground lactic casein.
Oxford Paper Co., Felix Taussig, Buenos Aires, 500 bags lactic casein.
Perkins Glue Co., Felix Taussig, Buenos Aires, 1000 bags lactic casein, 75,000 kilos.
(———), Rio Chubut, Buenos Aires, 200 bags casein.
F. H. Paul & Stein Bros., Anita, Buenos Aires, 1500 bags lactic casein, 75,000 kilos.
Sheffield Farms Co., Inc., Anita, Buenos Aires, 500 bags lactic casein, 25,000 kilos.

WOODPULP

Gottesman & Co., Inc., Knox Victory, Fagervik, 2400 bls. prime strong sulphite; 2100 bls. half prime strong sulphite.
Perkins Goodwin & Co., Knox Victory, Fagervik, 2100 bls. sulphite.
Stora Kopparberg Co., Knox Victory, Skutskar, 8402 bls. dry pulp.

Russell Smith Back from Army

HOLYOKE, Mass. — Russell J. Smith has returned to the Crocker-McElwain, where he was engaged in sales promotion work before entering the army.

Nekoosa Grants Help to Home-Building Employes

WISCONSIN RAPIDS, Wis.—Nekoosa-Edwards Paper Company will help employes build homes in Nekoosa and Port Edwards, where its mills are located, it was announced June 29 by John E. Alexander, president and general manager.

The plan is a new approach on the part of private industry to help alleviate the housing shortage and to help encourage home ownership on the part of employes.

Fifteen outright grants of $300 will be made in each of the communities to employes who have commenced or will begin the construction of homes for their own occupany this year. Applications for the grants are to be submitted to C. A. Jasperson, secretary-treasurer of the company, who will refer them to a special house committee for approval. Benefits under the plan will close when 15 applications have been approved in each community, but in any event not later than October 1.

Nepco's purchasing department will help procure building materials for the applicants. An employe with an approved application who has not already begun construction will be given a certificate guaranteeing $300 upon evidence of beginning work before October 1. Those who have started building since January 1, 1946, will be given the $300 in cash if their applications are approved.

New Morris Type R Slurry Pump Now On Market

Basically different from pumps now on the market, the new Morris Type "R" Slurry pump, gives new freedom from packing troubles, and overcomes the uncertainty of proper hub-sealing water pressures. At the same time, it has the ability to handle maximum suction lifts as well as practically unlimited positive suction heads.

The pump takes its suction from the drive side, thus its packing is subjected only to the suction or positive-head pressures. It means that the pump operates equally well under high suction lift, or a positive head, and that it may be connected directly to any tank or be cut into the line as a booster pump without an intermediate pressure tank or a suction hopper. The pump is furnished in five sizes from 2 to 6 inches. Further details may be obtained from Morris Machine Works, Baldwinsville, N. Y.

Col. Smalley Due for a Visit

BOSTON — Colonel Edgar Smalley, managing director of Edwin Butterworth & Company, Ltd., paper stock dealers, England, is due to arrive on the Queen Mary shortly. Colonel Smalley is planning to visit the trade for three or four weeks, with the office of E. Butterworth & Company, Inc., here as his headquarters.

Week's Record of Trends in The Paper and Pulp Market

Office of the PAPER TRADE JOURNAL,
Wednesday, July 10, 1946.

Paper and paperboard production in the first four months of this year exceeded production for the same period of 1945 by 8.5 per cent according to latest Department of Commerce figures. Total production reached 6,211,000 tons during this period, which on an annual basis amounts to 18,630,000 tons. The principal factor allowing for substantially greater paper and paperboard production this year has been the improvement in fibrous raw material supplies. In the case of pulpwood, the successful replacement of prisoners of war on pulpwood operations in the South by civilian labor and generally better supply of woods labor in this area is particularly significant. Large scale mechanization of pulpwood operations in southern areas should result in much greater productivity per man and offset to a degree higher wage and timber costs.

Wood pulp production continued at a high level through the first four weeks of May, according to field reports, notwithstanding the coal and railroad strike problems which occurred during the month. Difficulties were encountered by some mills depending upon rail pulpwood and other raw materials, including coal, which may show their full effect in June output. However, sufficient supplies were available through May to allow most paper and board mills to sustain production at a level not greatly below April and March.

Production of groundwood, book and fine papers during the first four months of 1946 was well above the output of the corresponding period in 1945. Largest increases in printing papers occurred in book grades, due to the fact that pulps suitable for book paper manufacture are much more readily available. Supplies of all the above papers continue to be well below market demands, and mills continue to allocate tonnage to their customers. Shortage of book papers is partly due to increased demand and partly to removal of a relatively small amount of paper from the market following the purchase of mills making book papers by publishing interests.

The index of general business activity for the week ended June 29 rose to 133.6 from 132.9 in the previous week, compared with 139.8 for the corresponding week in 1945. The index of paperboard production rose to 164.4 from 163.8 in the previous week, compared with 154.1 for the corresponding week in 1945.

Paper production for the week ended June 29 was estimated at 105.5 per cent, compared with 106.2 for the preceding week, with 88.8 for the corresponding week in 1945, with 86.2 for 1944, with 77.4 for 1943, and with 67.6 per cent for the corresponding week in 1942.

Paperboard production for the week ended June 29 was 98.0 per cent of capacity, compared with 97.0 per cent for the preceding week, with 96.0 for the corresponding week in 1945, with 95.0 for 1944, with 92.0 for 1943, and with 59.0 per cent for the corresponding week in 1942.

Wood Pulp

Imports of wood pulp are gaining momentum, but shipments are lagging behind original schedules. Pulp imports from January 4 through June 13 amounted to 241,742 short tons. Sweden accounted for 84 per cent of the total, Finland the remaining 16 per cent. Broken down, the tonnage was composed as follows: 36 per cent unbleached sulphite, 52 per cent unbleached sulphate (kraft), about 5 per cent bleached sulphite grades other than alpha and dissolving. The remaining 7 per cent included mechanical pulp, bleached sulphate and special chemical grades of bleached sulphite.

Consumption continues at the same high rate, except for mid-year closings throughout the country. Many mills are planning to shut down for a week's vacation during which time repairs and other changes will be made. This lull in consumption will affect domestic production, but imports will be rising and the industry should be the gainer.

Rags

All new cotton cuttings remain in heavy demand, particularly high grade white shirt cuttings and unbleached muslins. Mills are taking all offerings for present needs and for building up their inventories.

Heavy wipers at $50 to $55 must still be purchased to get classification stock at $29 to $31 per ton in most instances. Blue overalls have been imported at 4c per pound, though not enthusiastically. Certain lots of imported new cuttings are on hand overseas now that asking prices are legal. White stocks are still rare, however, though some are reported available in Europe, South America, Egypt and Belgium.

Old Rope and Bagging

Market for old rope remains as it has been. Sisal brings 4.75c, small sisal 4c, soft jutes range up to 5.50c to consumers, though dealers usually purchase them at 5c or less in small lots. Top prices are paid for Manila which accounts for not more than 40 per cent of current accumulations of large rope.

Lifting of price ceilings mean little to the bagging market since the item sold consistently below ceilings. No. 1 scrap bagging is currently $4.50 delivered to mills, with odd lots to dealers at $3.50 to $3.75 and more for choice stock. Inferior grade foreign scrap is $3.75 dock. Gunny hovers around $4 to $4.50 delivered to mills. Southern mixed bagging is changing hands at $3.50 and up.

Waste Paper

Despite the fact that paper mill men are convinced that later in the year they will need all the paper they are now turning down, mixed paper started to back up on dealers in earnest this week. The condition is believed to be a temporary one, and is expected to improve before the end of the month.

Corrugated containers are relatively easy. Folded news is fairly steady. Book stock is hard to dispose of, inferior packs are turned down, with offers ranging from $33 to $22, while No. 1 packs remain at top levels. Old kraft is firm at $50 per ton. Upgrading of high grades is prevalent, most clean soft white shavings are "one-cut," and most hard white shavings are envelope cuttings.

Strathmore's 25-Year Club Takes in 72 Members

WORONOCO, Mass.—A large number of Strathmore Paper Company employes were presented with 25-year service pins at a dinner meeting recently of the 25-Year Club held at the Strathmore Inn. Seventy-two were eligible for the award but several of them were unable to attend. This meeting was the first the club has been able to hold in four years, because of the war.

George E. Williamson, president of the company, was the principal speaker and awarded the pins. Williamson stated that out of the 170 members in the club, 163 are still actively employed. The length of service of the group totals 5224 years. A message was read from Horace A. Moses, founder of the company and chairman of the board of directors, expressing his regrets at being unable to attend.

The committee in charge includes George Maxwell, chairman, James Adams, Miss Christine J. Darymple, Charles E. Higgins, Michel J. O'Connell and Miss Gertrude M. Tucker.

Portage County Approves Eau Pleine Flowage Plan

STEVENS POINT, Wis.—The Portage County Board of Supervisors decided at a meeting here July 3 in favor of the abandonment of a mile and one-quarter of County Trunk H, in the town of Eau Pleine, in order to facilitate construction of the proposed Little Eau Pleine flowage development. The board stipulated, however, that it will not officially close the road until the Wisconsin Valley Improvement Company has presented proofs that it has obtained signed settlement agreements from all persons in the town whose land would be affected by the flowage.

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, July 10, 1946.

BLANC FIXE—Active demand reported. Pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton, f. o. b. works.

BLEACHING POWDER—Market tight, demand reported strong. Supply situation is reported favorable although containers are hard to get. Quotations are unchanged. Prices on bleaching powder range from $2.50 to $3.10 per 100 pounds, in drums, car lots at works.

CASEIN—Prevailing prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 33 cents per pound; 2,000 pounds 33¼ cents per pound; less than 2,000 pounds 33¾ cents per pound, f. o.b. shipping point. Imported, 33 cents per pound.

CAUSTIC SODA—Demand continues very heavy. Cutback production reduces stocks. Market tight with demand above output. Solid caustic soda is quoted at $2.30 per 100 pounds; flaked and ground is quoted at $2.70 to $2.95 per 100 pounds.

CHINA CLAY—Fair to good demand reported. Quotations remain unchanged. Supply good. Domestic filler clay is currently quoted at from $8.50 to $9 per ton; coating clay is quoted at from $12 to $22 per ton, at mine; Imported clay is quoted at from $22 to $25 per long ton, ship side.

CHLORINE—Tight market, diminished inventories, very heavy demand. Quotations unchanged, Chlorine is currently quoted at $2.00 to $2.25 per 100 pounds, in single unit tank cars, f. o. b. works.

ROSIN—Demand continues moderate. "G" gum rosin is quoted at $6.90 per 100 pounds, in barrels, at Savannah; "FF" rosin at $6.80 per 100 pounds, in barrels, at New York; seventy percent gum rosin at $7.00 per 100 pounds, f. o. b. works.

SALT CAKE—Very heavy demand is currently keeping inventories low. Prices remain unchanged. Domestic salt cake is quoted at $15 per ton, in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots, f. o. b. shipping point.

SODA ASH—Active over-all demand is reported. Market remains tight with demand above output. Orders allocated to equalize distribution. Quotations continue unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $.95; in paper bags, $1.05; and in barrels $1.35.

STARCH—Demand exceeds supplies in a tight market. Previous orders filled. Starch prices continue unchanged. The pearl grade is quoted at $3.72 per 100 pounds; powdered starch at $3.83 per 100 pounds; all prices in bags; car lots, f. o. b. Chicago.

SULPHATE OF ALUMINA—Supply situation good with demand reported active. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.35 per 100 pounds, in bags, car lots, f. o. b. works. The iron free is currently quoted at $1.75 to $2.00 per 100 pounds, in bags, at works.

SULPHUR—Quotations on sulphur continue to conform to prevailing market prices. Demand moderate. Annual contracts are quoted at $16 per long ton, f. o. b. mines; the prices at Gulf Ports is $17.50 per long ton.

TALC—Prices on talc continue unchanged. Demand steady. Domestic grades are currently quoted at from $16 to $30 per ton at mines; Canadian at $24 to $30 per ton. All prices in car lots.

MARKET QUOTATIONS

While the trade is adjusting its policies, pending determination of further authority for OPA and its scope, the prices quoted continue under recent formulas. All quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942.

Paper

(Delivered New York)

Standard News, per ton—			
Roll, contract	*$67.00	@	—
Sheets	75.00	@	—

* OPA Maximum Price.

Kraft—per cwt.—Carload Quantities Zone A, Delivered			
Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—

* OPA Manufacturers' Prices.

Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—

Toilet—1 M. Sheets—Per Case			
Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—

Paper Towels, Per Case—			
Unbleached, Jr.	2.20	"	—
Bleached, Jr.	3.20	"	—

Manila—per cwt.—C. l. f. a.			
No. 1 Jute	11.25	@	—
No. 1 Manila 35 lb.	6.00	"	7.00

Boards, per ton—			
News	*$54.00	@	—
Chip	*54.00	@	—
Sgl. Mla. Ll. Chip	*65.00	@	—
White Pat. Coated	*79.00	@	—
Kraft Liners 50 lb.	*74.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$39.10@$46.00	$40.25@$47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper
Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	@$15.50
No. 2 Glossy Coated	12.40 "	14.00
No. 3 Glossy Coated	11.60 "	13.25
No. 4 Glossy Coated	11.15 "	12.75
No. 1 Antique (watermarked)	10.25 "	11.75
No. 2 Offset	9.60 "	11.00
A Grade E. F.	9.35 "	10.75
A Grade S. & S. C.	9.60 "	11.00
B Grade E. F.	8.85 "	10.25
B Grade S. C.	9.10 "	10.50
C Grade E. F.	8.55 "	9.75
C Grade S. C.	8.80 "	10.00
D Grade E. F.	8.25 "	9.50
D Grade S. & S. C.	8.50 "	9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers' Prices, Less Freight. Not Exceeding OPA Allowances.

Bl. Softwood Sulphite	$94.00
Unbl. Softwood Sulphite	82.00
Bl. Hardwood Sulphite	91.50
Unbl. Hardwood Sulphite	79.50
Bl. Glassine Sulphite	97.00
Unbl. Glassine Sulphite	86.00
N. Bleached Sulphate	94.00
S. Bleached Sulphate	88.00
N. Semi-Bleached Sulphate	89.00
S. Semi-Bleached Sulphate	86.00
N. Unbl. Sulphate	76.00
S. Unbl. Sulphate	69.50
Bl. Soda	84.00
Unbl. Soda	80.00
Groundwood	58.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$12.50
Lake Central	12.50
Southern	15.00
West Coast (in area)	9.50
West Coast (out area)	15.50

	50%-80% Air Dry Weight
Northeast	$10.50
Lake Central	10.50
Southern	13.00
West Coast (in area)	8.50
West Coast (out area)	14.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$7.50
Lake Central	7.50
Southern	10.00
West Coast (in area)	6.50
West Coast (out area)	12.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices.

Domestic Rags

New Rags

(Nominal Prices Delivered to Mill + 5% Brokerage)

Shirt Cuttings—		
New White, No. 1	7.25 @	Nominal
Silesias No. 1	5.75 "	"
New Unbleached	7.50 "	"
Blue Overall	5.50 "	"
Fancy	3.50 "	"
Washables	3.00 "	"
Bleached Khaki Cutting	4.25 "	"
Unbleached Khaki Cuttings	3.50 "	"

Old Rags

White, No. 1—			
Repacked	3.80	@	Nominal
Miscellaneous	3.20	"	"
White, No. 2—			
Repacked	2.90	"	"
Miscellaneous	2.65	"	"
Thirds and Blues—			
Repacked	2.20	"	"
Miscellaneous	1.30	"	"
Roofing Rags—			
No. 1	1.55	"	"
No. 2	1.45	"	"
No. 3 (bagging)	1.35	"	"
No. 4	1.35	"	"
No. 5A	1.35	"	"
Old Manila Rope	5.75	"	"

Foreign Rags

(All Prices Nominal)

New Rags

New Dark Cuttings	6.00	@	Nominal
New Mixed Cuttings	6.50	"	"
New Light Silesias	5.75	"	"
Light Flannelettes	5.75	"	"
New White Cuttings	12.00-14.00		
New Light Oxfords			Nominal
New Light Prints	8.00-10.00		

Old Rags

No. 1 White Linens	8.50	@	Nominal
No. 2 White Linens	7.50	"	"
No. 3 White Linens			Nominal
No. 4 White Linens	3.25	@	Nominal
No. 1 White Cotton	4.75	"	"
No. 2 White Cotton	3.75	"	"
No. 3 White Cotton	3.00	"	"
No. 4 White Cotton	2.20	"	"
Extra Light Prints	2.40	"	"
Ord. Light Prints	5.50	"	"
Med. Light Prints	4.75	"	"
Dutch Blue Cottons			Nominal
French Blue Linens			Nominal
Checks and Blues	4.00	"	"
Linsey Garments	4.00	"	"
Dark Cottons	3.60	"	"
Old Shopperies	3.35	"	"
New Shopperies	3.50	"	"
French Blues			Nominal

BAGGING

(Prices to Mill, f.o.b. N. Y.)

Gunny No. 1—			
Foreign	4.00	@	Nominal
Domestic	3.30	"	"
Wool Tares, light	4.00-4.75		
Wool Tares, heavy	4.50	@	Nominal
Bright Bagging	3.50	"	"
Manila Rope—			
Foreign			Nominal
Domestic	5.75	@	Nominal
Jute Strings	5.50	"	"
No. 1 Sisal Strings	4.00	"	"
Mixed Strings	1.50	"	"

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Mixed Books	1.10	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Mixed Ledger, colored	2.00	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.95	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	1.10	"	—

Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17¾	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—

(Hard Fiber)

Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill)

Shirt Cuttings—			
New White No. 1	.07¼		
New White No. 2	.05¼		
Light Silesias	.05¾		
Black Silesias, soft	.03¼		
New Unbleached	.07½		
Washable Prints	.04¼		
Washable No. 1	.03		
Blue Overall	.05½		
Cottons—According to grades—			
Washable Shredding	.01¾		
Fancy Percales	.04¼		
New Black Soft	.03¼		
Khaki Cuttings—			
Unbleachable Cotton Cuttings	.03½		
Bleachable Cotton Cuttings	.04¼		
Men's Corduroy	.03½		
Ladies' Corduroy	.03		
Cottonades	.03¼		

Domestic Rags (Old)

White No. 1—Repacked	3.80	@	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
White No. 2—Repacked	2.90	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	@	3.50
No. 1 Clean Bright—Sisal Strings	.04	"	—
No. 2 Clean Bright—Sisal Strings	.03	"	—
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	2.75	@	2.90
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	* —	"	4.00
Mixed Rope	1.60	"	—
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.00	"	3.25
South America	—	"	3.25

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices, Baled

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	2.75	@	2.90
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	* —	"	4.00
Mixed Rope	1.60	"	—
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.00	"	3.25
South America	—	"	3.25
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	—
Aust. Wool Pouches	—	"	3.45
New Zealand Wool Pouches	—	"	3.50
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.35	"	—

* OPA Maximum Prices.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¼	"	.05
New White No. 1	.06¾	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06¼
Underwear Cutters, Bleached	.06¼	"	.06¾
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¼
New Black Silesias	.03	"	.03¼
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¼	"	.03½
New Canvas	.06¼	"	.06½
B. V. D. Cuttings	.06¼	"	.06½

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—Repacked	3.80	@	—*
Miscellaneous	3.20	"	—*
White No. 2—Miscellaneous	2.65	"	—*
Twos and Blues, Repacked	2.20	"	—*
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—*
Miscellaneous	1.80	"	—*
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—*
No. 2	1.45	"	—*
No. 3	1.35	"	—*
No. 4	1.35	"	—*
No. 5, Quality A	1.35	"	—*
Quality B	1.20	"	—*
Quality C	.95	"	—*
Old Manila Rope	5.75	"	—*

* OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices, Baled

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.30	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—
Misc.	2.15	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Ledger, colored	2.00	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Box Board Cuttings	.72½	"	—
Kraft Corrugated Cuttings	2.25	"	—
Old Corrugated Containers	1.40	"	—
Overissue News	1.00	"	—
No. 1 News	1.00	"	—

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The CENTRAL OHIO PAPER COMPANY

Paper Merchants and

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★ We manufacture large quantities of envelopes and school supplies; coat or impregnate paper, cellulose film, foil, acetate, cloth and similar materials. After 70 years of serving well this highly industrialized area we are even better prepared for the future.

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226 NORTH FIFTH STREET - COLUMBUS 16, OHIO
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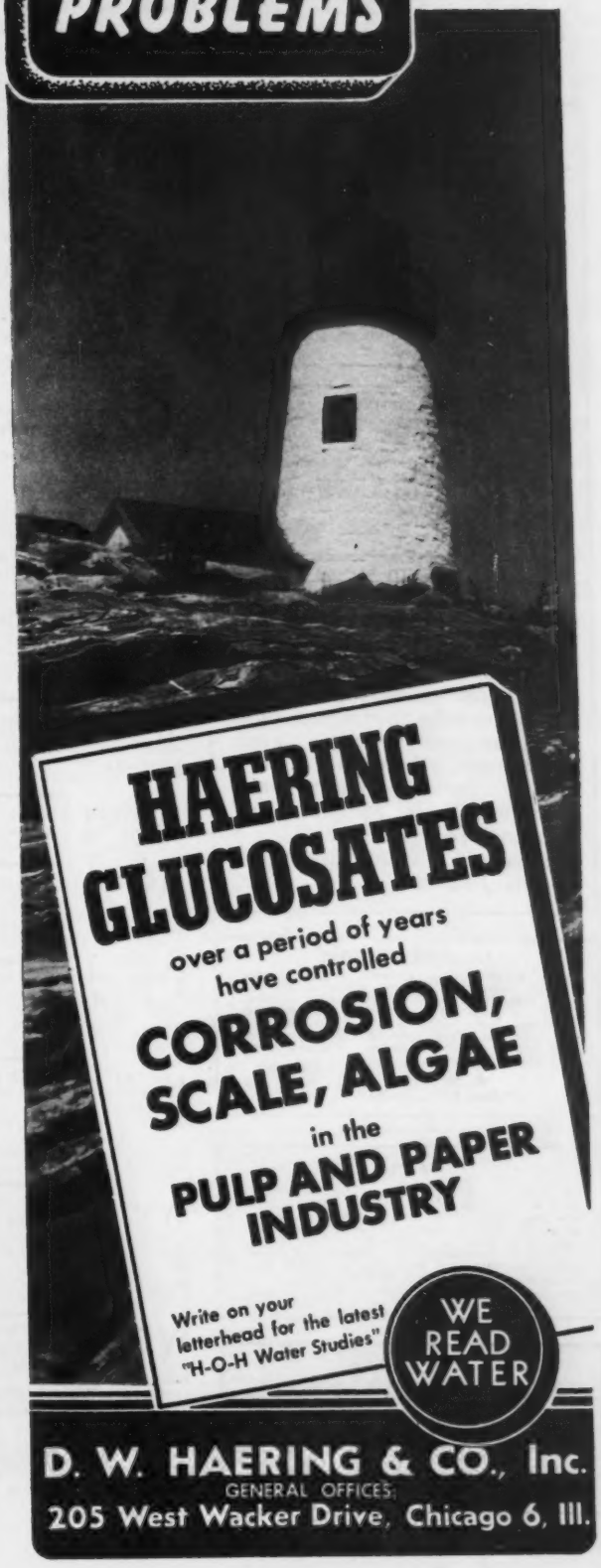
Indianapolis Toledo Charleston

WATER PROBLEMS



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over a period of years have controlled

CORROSION, SCALE, ALGAE

in the

PULP AND PAPER INDUSTRY

Write on your letterhead for the latest "H-O-H Water Studies"

WE READ WATER

D. W. HAERING & CO., Inc.
GENERAL OFFICES:
205 West Wacker Drive, Chicago 6, Ill.

The CLEARING HOUSE

HELP WANTED—5c a word. Double rate for heavy face type. Minimum charge $1.25.
SITUATIONS WANTED—5c a word, double rate for heavy face type. Minimum charge $1.25. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—5c a word. Double rate for heavy face type. Minimum charge $1.25.
WANTED—5c a word. Double rate for heavy face type. Minimum charge $1.25.
OPPORTUNITIES—5c a word. Double rate for heavy face type. Minimum charge $1.25.
Classified advertising space may also be purchased at $3.00 per single column inch.

All classified advertisements are payable in advance. If box number is used—35 cents additional.
Address replies to advertisements appearing under Box numbers in care of
PAPER TRADE JOURNAL, 15 West 47th Street, New York 19, N. Y.

Copy for Classified Advertisements must be in our office on Monday preceding publication

HELP WANTED

Superintendent — Mechanical Engineer preferred—to take charge of large Paper Bag Manufacturing Plant in N. Y. City. Prefer man who has had experience in this line. Age 35 to 45 years. Must be capable of handling labor, etc.
State qualifications and salary required. Excellent future for right man.

Address Box 46-462 care Paper Trade Journal. J-11

FELT ENGINEER
ME or BCHE. Process and design experience in felt and roofing manufacture required.
Location NYC; nationally known corporation. Salary to $7000.
Write fully stating experience, education, age, previous earnings.
Address Box 46-461 care Paper Trade Journal. J-11

PROCESS ENGINEER
Wanted

With wide experience in pulp and paper making processes. Must be able to develop flow diagrams and specify related equipment. Excellent opportunity for the right man. Please furnish complete experience record.
Address Box 46-261 care Paper Trade Journal. TF

SALARIED POSITIONS
$2,500-$25,000. This thoroughly organized confidential service of 36 years' recognized standing and reputation carries on preliminary negotiations for supervisory, technical and executive positions of the calibre indicated. Retaining fee protected by refund provision. Identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
117 Dun Bldg., Buffalo 2, N. Y.

WANTED
We have an opportunity for a man experienced in the conversion of facial tissue, familiar with the Teall folder, Container Equipment gluers and automatic boxers. Salary is entirely dependent upon how valuable you make yourself to us. Permanent, responsible job. Complete history of your experience and preferably a picture with your reply. Vicinity New York City.
Box 46-427 care Paper Trade Journal. A-15

WANTED
2 Machine Tenders and 2 Back Tenders for 104" Fourdrinier Machine making Board, 2 Machine Tenders and 2 Back Tenders for 82" trim, three-cylinder Machine making Board.
Mill planning extensive expansion and reconversion program.
Write to Box No. 46-424 giving experience, references, etc. J-25

HELP WANTED

CHARLES P. RAYMOND SERVICE, INC.
294 Washington St., Boston, Mass.
Specializing in Paper Mill Personnel
Positions Now Open
Assistant Purchasing Agent, $4000-$6500 year
Cost Accountants $4000 to $10,000 year
Technical directors (two)
Draftsmen, plant engineers and assistant plant engineers
Master Mechanic or head Millwright
Tour Boss
Manager wax paper converting plant
Night boss cylinder machines
Chemists
Mechanical engineer to design automatic bag machines
Cylinder and Fourdrinier machine and back tenders, beater engineers
We invite correspondence (strictly confidential) with paper and pulp mill executives seeking new positions and with employers seeking new personnel. J-11

WANTED
Plant Engineer for two Machine Mill, at Walloomsac, N. Y. Revamping and rebuilding with extensive expansion program under way including Corrugating Box equipment. Experience in Power, Steam, Turbine and paper making required. Do not reply unless qualified. State age, experience and education, salary expected. Walloomsac Paper Mills, Inc., 25 Vanderbilt Avenue, New York 17, N. Y. J-25

WANTED—Chief Draftsman—Must be experienced on pulp and paper mill machinery. To take complete charge of drafting room. Give full particulars in first letter. Address Box 46-420 care Paper Trade Journal. J-11

WANTED—Foreman or Superintendent having experience in embossing and embossing machines and methods. Must be able to rebuild, improve and devise. Address Box 46-428 care Paper Trade Journal. A-15

WANTED—Man experienced in running Hamblet Sheeting Machine. Address Box 46-452 care Paper Trade Journal. J-11

WANTED—Back Tenders and Machine Tenders for 6 cylinder Board Machine 98" wide in new mill now operating; located West Indies. Good climate. For full particulars address Box 46-456 care Paper Trade Journal. J-11

COST ACCOUNTANT WANTED—Paper Mill experience in costing and related work necessary. Send resume of experience, education and salary desired to Box 46-425 care Paper Trade Journal. J-11

CHEMICAL ENGINEER for applied research and development relating to pulping and papermaking. Especially interested in person thoroughly familiar with pulping technics and from 3 to 5 years experience. Give full details in letter to The Institute of Paper Chemistry, Appleton, Wisconsin. J-18

WANTED — Man familiar with paper stock grades to take charge of the Receiving Dept. of a one-machine mill making the better grades of boxboard. Good salary plus a bonus. Also WANTED Millwrights familiar with board mill operation. Good hourly rate plus bonus. Address Box 46-359 care Paper Trade Journal. Jl-18

WANTED—Alert, Mechinical Engineer, with paper mill experience for sales and engineering work with old established machinery builder. Excellent opportunity for right man. Write Box 46-405 care Paper Trade Journal. J-11

WANTED—Executive for General Manager Eastern Paper Board Mill. Must be good organizer and have production, operation and administrative experience. Excellent opportunity for right man. Address Box 46-453 care Paper Trade Journal. J-11

HELP WANTED

Wanted: Night Superintendent for Specialty Coated Paper Mill, capable of taking full charge. Give age, experience, and salary expected in first letter. Address Box 46-455 care Paper Trade Journal. J-25

SITUATIONS WANTED

Graduate engineer, middle thirties, wants position in Southern industry. Planning, estimating, design and construction experience. Maintenance, supervisory and management experience in wood handling, all phases of sulphate pulping, Fourdrinier and cylinder operation lightweight papers to heavy boards. Knowledge of groundwood pulping and wallboard manufacture. Present salary $10,000. Address Box 46-413 care Paper Trade Journal. J-11

MECHANICAL ENGINEER—22 years experience in the pulp, paper and board industry in Engineering and Managing capacities. Operation Power, Maintenance and Construction. Kraft and Sulphite pulping processes. Paper machines and conversion. Thoroughly versed in details, methods and supervision. Capable of taking over with a minimum of orientation time. Invites correspondence. Address Box 46-403 care Paper Trade Journal. J-11

PRACTICAL MASTER MECHANIC and a Paper Maker. Thirty years experience in maintenance, installation, layouts on cylinders and fourdrinier equipment. Making kraft, board, tissue, waterleaf, parchment and rag stock. Desire a permanent connection. Address Box 46-400 care Paper Trade Journal. J-11

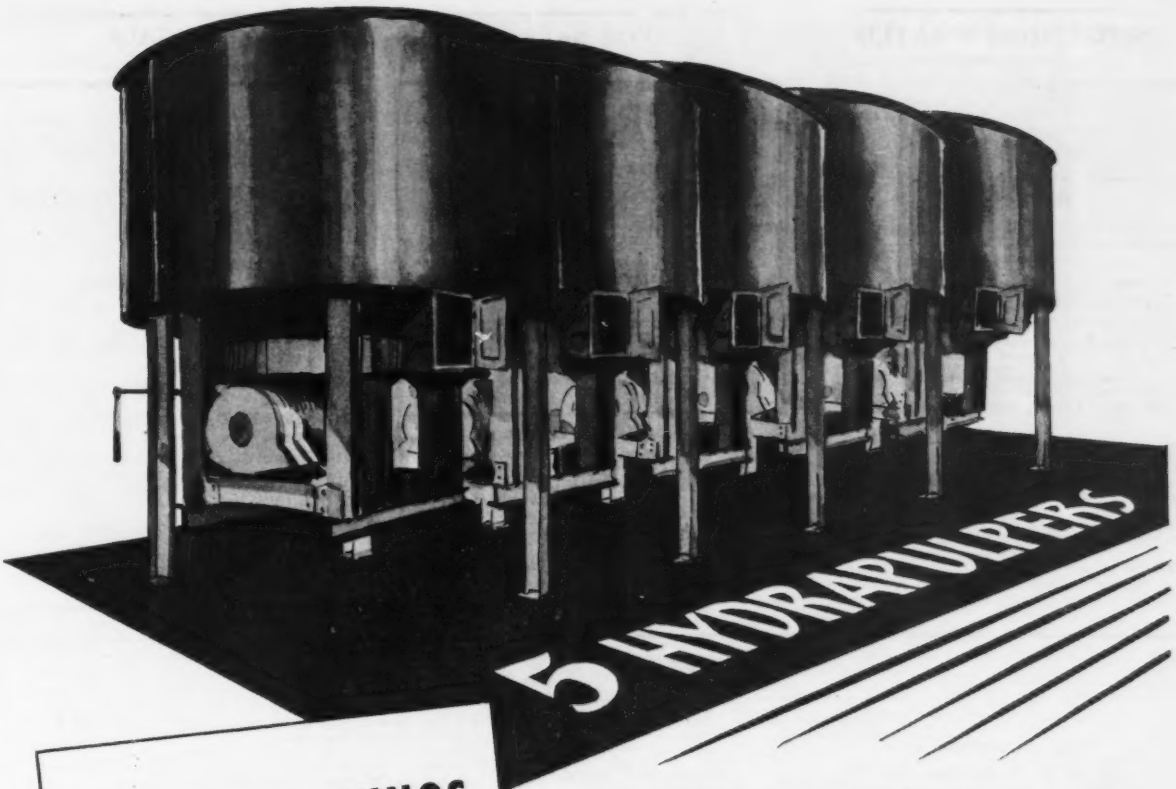
MILL REPRESENTATIVE covering the jobbing and direct trade for the past 15 years from Pennsylvania through to the Carolinas, now desires to operate over the same territories with 2 or 3 non-conflicting lines. What have you to offer? Address Box 46-412 care Paper Trade Journal. TF

WANTED — Position as Chief Engineer — 18 years of experience in Power Plant operation, heat balance and Plant efficiency. Age 40. Best of references. Address Box 46-449 care Paper Trade Journal. J-18

CHEMIST—17 years in productive pulp and paper research. Desires position in charge of development, or as technical director. Present salary $4800. Address Box 46-448 care Paper Trade Journal, J-11

CHEMIST, EXPERIENCED, QUALITY AND TECHNICAL CONTROL, New England or Eastern New York preferred. Address Box 46-460 care Paper Trade Journal. A-8

PRODUCTION ENGINEER — Ex-Superintendent on cylinder specialties, a practical papermaker who can produce quantity with quality. Can also solve manufacturing problems, large or small. Address Box 46-458 care Paper Trade Journal. J-25



STRANGER THINGS SELDOM HAPPEN

...NOR ARE FINER COMPLIMENTS EVER PAID

Because it is the fastest piece of equipment ever to grace a beater room; because it pulps faster, more uniformly and more thoroughly than anything else ever designed; because on de-inking and blending it is also tops—because of these established facts—

A mill recently ordered 5 Hydrapulpers without so much as a visit to the mill by any *Shartle* or *Dilts* representative.

Any wonder 246 hydrapulpers have been sold in just a few short years and despite the handicaps imposed by war! Something to ponder, Mr. Superintendent—something to ponder.

S H A R T L E - D I L T S

SHARTLE BROS. MACHINE CO., Middletown, Ohio
DILTS MACHINE WORKS, Fulton, New York
Divisions of The Black-Clawson Co., Hamilton, Ohio
Associate: Alexander Fleck Limited, Ottawa, Canada

Detail of sloping extractor plates.

Business end of a hydrapulper.

Hydrapulpers pulp virgin stock, mixed papers almost instantly.

SITUATIONS WANTED

POSITION WANTED — Superintendent practical papermaker, 30 years experience in the manufacture of folding boxboard and cylinder specialties. Address Box 46-459 care Paper Trade Journal. A-1

FOR SALE

FOR SALE

1—Valley Iron Works Pulper, with motor Capacity 1000# per hour
1—84" 4 knife chipper
1—No. 1 A Bird screen, .014 cut plates
2—6 plates screens (Sandy Hill)
3—10 plate Waterous screens
1—2L Connersville vacuum pump
1—8 x 10 Connersville vacuum pump
1—72" Wet machine (Good condition)
1—84" Heavy duty Hamblet cutter

FRANK P. LYDEN, FORT EDWARD, N. Y.
J-18

FOR SALE—Paper Tube Machinery—four semi-automatic convolute paper tube winding machines equipped with motors and mandrels. Two 48" Paper Sheet pasting machines with motors. Write American Paper Products Co., 2113-37 East Rush Street, Philadelphia 34, Pa. A-1

FOR SALE—44" Seybold Cutter, guaranteed to be in good operating condition. Address Box 46-457 care Paper Trade Journal. J-11

FOR SALE

FOR SALE

2 Each, HUDSON SHARPE 72" Wide Toilet Tissue machines and Winding machines

Address Box No. 46-454 care Paper Trade Journal. TF

FOR SALE

8—New Shartle iron tub beaters with rolls 80" dia., 55" face, anti-friction bearings, stainless steel hoods, ideal for broke beaters, batch breakers or washers, capacity about 4000#.

Osborne Paper Mill Equipment Co.
Fulton, N. Y. TF

FOR SALE

One standard Langston tube winder.

1—64" Creping Machine. Creping roll 12" in diameter with doctor blade. Two dryers 36"x64" and rewind.

1—Noble & Wood Pony Jordan with extra plug, 1/8" steel fillings.

1—Beloit 8x18" Duplex Plunger Pump.
1—84" Carthage Machine Co.'s 4-knife Chipper.

1—36x84" Wet Machine Cylinder.

1—Bird Machine Co.'s Pulp Screen.

1—110" Double-drum Waldron late type shear cut Hydraulic Slitter and Rewinder.

3—Lockport flat and square bag machines, making bags from 2 to 16 lbs.

1—Noble & Wood 100 lb. Experimental Beater.

1—Complete outfit for making twisting papers, six 36 spindle Brownell Twisters, 3 Universal Winders and 30" wide Fales Slitter.

GIBBS-BROWER COMPANY, INC.
21 East 40th St., New York 16, N. Y.
TF

FOR SALE

COMPLETE 92" SINGLE CYLINDER PAPER MACHINE

BEATERS
1—2000 lb. Holyoke-Iron Tub Beater.
2—1200 lb. E. D. Jones (no tubs).
1—1000 lb. Dayton Beater (no tub).
1—1000 lb. Stout & Mills Iron Tub Beater.
1—400 lb. Gavit—iron tub beater.
1—Breaker Beater—Dilts Bandless Roll 62" diameter x 54" face—70 tons daily capacity. Equipped with Shartle Bros. Ragger.

CALENDER STACKS
1—5 roll 84" face—Farrel.
1—6 roll—72" face.
1—7-roll 36" Holyoke Machine. (supercalender)

CENTRAP
1—Shartle Brothers Centrap.

CENTRIFINERS
5—Bird Centrifiners, including motors and starters.

COATING MACHINE
1—26" six roll coating machine.

CYLINDER MOULDS
2—30" diameter x 74" face.
2—30" diameter x 54" face.
1—30" diameter x 75" face.
1—36" diameter x 84" face.

DRIVES
4—Smith & Winchester Drives.
1—Moore & White mortise gear drive.
1—D. O. James 75 H.P. Speed Reducer with couplings and motor base. Ratio 2.16 to 1. 900 RPM to 418 RPM.

DRYERS
2—8' diameter x 175" face.
1—48" diameter x 60" face, anti-friction bearings. Creping dryer.
1—48" diameter x 94" face.
1—24" diameter x 84" face. (Baby)
2—36" diameter x 64" face, with frames gears and bearings.
2—25" x 120" (Baby Dryers).
2—30" x 120".
1—48" x 100".
11—30" x 80". (Steel Dryers).
5—24" x 70". (Steel Dryers).
2—36" diameter x 38" face.

ERKENSATORS
2—I. W. E. Erkensators—bronze construction—complete with motors, starters and distributing box.

FLAT SCREENS
1—12 plate Murray Dunbar Flat Screen.
1—4 plate Flat Screen.

JORDANS
1—Noble & Wood Monarch, anti-friction bearings, direct connected to 125 h.p. synchronous motor.
1—No. 2 Miami Jordan.
1—No. 9 Emerson Jordan—for direct connection to a motor.
1—Noble and Wood, Monarch, new fillings.

LABORATORY EQUIPMENT
1—Mullen Tester.

MOTORS
1—125 h.p. synchronous motor—including starting equipment. (450 r.p.m.)
1—25 h.p. motor, including starting equipment.

PRESS ROLLS (Rubber Covered)
1—27¼" diameter x 186" face.
1—26" diameter x 185" face.

PULP EQUIPMENT
1—84" Carthage Chipper (Four Knives).
1—32" three pocket Glens Falls Grinder (for 27" wood).

PULP SCREEN
1—IMPCO centrifugal pulp screen design No. 3.

PULPER
1—Jones Pulper.

PUMPS
1—10 x 11 Connersville Vacuum Pump.
1—10 x 7½ Connersville Vacuum Pump.
1—No. 4 Connersville Vacuum Pump.
1—6 x 2L Connersville Vacuum Pump.
1—No. 7 Sturtevant Vacuum Pump.
1—Buffalo Pump—5500 g.p.m. direct connected to 100 H.P. Motor (50' head).
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.

RAG CUTTER
1—Taylor Stiles, 14", Little Giant.

REELS
1—72" Downingtown Expansion Reel.
1—2 Bowl Reel — 112" face — bowls 20" diameter.
1—2 Bowl Reel—110" face.
1—Set Stack Reels, capacity trim 143".

ROLLS
500—Brass tube—steel tube—rubber covered iron rolls—various sizes.

ROTARY SCREENS
3—Moore & White Rotary Screens (alternating diaphragm type).

SAVEALL
1—Saveall 36" diameter x 96" face cylinder mold. (With iron end vat.)
1—Saveall 36" diameter x 96" face cylinder mold. (With wood vat.)

SCREW PRESS
1—Valley Iron Screw Press.

SCREEN PLATES
36 plates—43 x 11 1/16"—.050 cut—bevel edges.
24 plates—Recently recut .008.
12 plates—Recently recut .035.
Also other sizes and cuts in stock.

SHREDDERS
1—No. 25 CRSE Mitts & Merrill Hog.
1—Gilman Shredder.
1—Waterville Shredder.

SHEETERS
1—84" Finlay Sheeter, Erie Layboy and 9 roll backstand.
1—128" Moore & White Sheeter with layboy.
1—48" Langston heavy duty chopper (this is a combination machine, combining a slitter, scorer, sheeter and chopper.)

SLITTERS AND WINDERS
1—108" Warren Winder.
1—36" Beck Razor Blade type Slitter & Winder.
1—110" Beloit slitter (slitter attachment only).
1—60" Moore & White Slitter and Winder set for 5/8" slits.
1—60" Moore & White Slitter and Winder set for 7/16" slits.
1—120" Moore & White 4 drum slitter.
1—80" 2 drum Warren Winder.

STOCK PULPS
1—12 x 20 Triplex Shartle.
1—10 x 20 Duplex Shartle Brothers.
1—10 x 12 open impeller. (All lead).
1—8 x 18 Downingtown Duplex.
Numerous other Centrifugal Stock Pumps. Advise us to your requirements.

SUCTION BOXES
1—Nash 100" face Suction Box.
1—Brass Suction Box—96".

V-BELT DRIVES
1—{23" diameter x 14" face, 10 grooves.
{15" diameter x 14" face, 10 grooves.
1—{32" diameter x 21¾" face, 15 grooves.
{14¾" diameter x 21¾" face, 15 grooves.

WET MACHINE
1—74" Moore & White.

We are always in the market to purchase your surplus or idle machinery. What have you to offer? Wanted Cylinder and Fourdrinier Machines (complete mills).

J. J. ROSS COMPANY

250 Frelinghuysen Ave. Tel.—Bigelow 3-3720 Newark 5, N. J.

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ROSS PAPER MACHINERY CO.

265 PASSAIC STREET
NEWARK 4, N. J.

CONVERTING
PAPER MAKING EQUIPMENT

NEW, USED, REBUILT
PAPER AND PULP MACHINERY

PURCHASED FROM THE UNITED STATES NAVY

18—Worthington Close Coupled Centrifugal Pumps. 6" x 6" 650 g.p.m. 25' head. 6 h.p. Star Electric splash proof motor. 1750 r.p.m. 440 volt, 3 ph.-60 cycle, ball bearing.

16—Warren Vertical Pumps. 6" suction. 3" discharge. 135 g.p.m. 80' head. Direct Connected 6 h.p. General Electric Motor. 1750 r.p.m. 440 volts, 3 ph.-60 cycle, ball bearing.

1—Warren Close Coupled Centrifugal Pump. 3" suction. 2" discharge. 60 g.p.m. 90' head. 6 h.p. General Electric 1750 r.p.m. 440 volts, 3 ph-60 cycle, ball bearing. All the above pumps and motors are in excellent condition and are of bronze construction.

2—Worthington 3". 2 stage, 200 g.p.m. 224' head. Bronze Ball Bearings.

AIR HOISTS
2—Two-Ton Ingersoll Rand
2—Five-Ton Ingersoll Rand

ATTRITION MILL
1—Sprout Waldron direct connected to two 20 H.P. motors—3 phase—60 cycle—440 volts.

BEATERS
2—1000 lb. Horne Iron Tub.
1—1200 lb. Holyoke Wood Tub.
4—Valley Iron 750 lbs. Iron Tub Beaters, with Silent Link Belt Drive.

BIRD SCREEN PLATE
26 Plate—60 cut. New condition.

BLOWERS
1—American ball bearing blower, size 17" x 23" for motor drive.
1—American Blower, size 40. For belt drive.

CALENDER DOCTORS
1 set of 16 Warren Doctors 104" face with frames.

CALENDER ROLLS
30 rolls various sizes

CALENDER STACKS
1—6 roll Beloit, 110" face.
2—2 roll Holyoke 36" face.
1—9 roll Moore & White—82" face.

CONVERTING EQUIPMENT
4—Sanitary Napkin Machines. With motors and starters.
1—Bliss Double Head Stitcher.
4—Waterville Grinders.
1—36" Waldron Reeling Machine.
1—32" Dampening Machine.
1—36" Brush Coating Machine.
1—Copper Mixing Tank with agitator—40 gal
1—Cast Iron Kettle 20" x 24" 2 outlets.

CREPING MACHINE
1—Complete Bagley & Sewall Creping Machine. Dryer 100" face x 48" diameter. Ball bearing equipped. Used 6 months.

CYLINDER MOLDS
2—Impco—84" face—40" diameter with stainless steel face wire
2—110" face x 36" dia.
1—90" face x 30" diameter—with ball bearings and cast iron end vats.
6—84" face x 36" diameter.
4—Cylinder Molds—cast iron and vats—cylinders 120" face x 38" diameter. Ball bearing.

DANDY ROLLS
2—122" face 10" dia.
1—138" face 12" dia.
1—129" face 9½" dia.

DRIVES
1—Falk 25 h.p.—7.5 to 1.—1750 r.p.m.

DRYER DOCTORS
40—Warren Doctors. Various sizes.

DRYERS
1—98" diameter x 102" face with bearings
36—28" diam. 96" face 2 deck frames Beloit.
82—48" Dia. x 46" Face, Chromium Plated.
2—24" Dia. x 46" Face.
4—48" diameter x 70" face.

ELECTRIC HOIST
1—Sprague Electric 3 ton hoist—5 h.p. 3 phase—60 cycle—110 volts.

FLAT SCREENS
2—78 plate Union Screen Company
1—8 plate Sandy Hill Packer—roller shoes.
1—10 plate Packer screen with scraper.

FOURDRINIER SHAKES
2—Beloit Fourdrinier Shakes.
1—Sandy Hill Bertram Shake. Late type.

FOURDRINIER WET END
1—120" Beloit Fourdrinier Wet End.
1—74" Pusey & Jones Wet End.

GRANITE ROLLS
2—112" face 20" diameter.

HAMMERMILLS
1—American Hammermill—37" anti friction bearing equipped.
1—Jeffrey Swing Hammer size 18"x24"—Type A.
1—Williams 18" Hammermill Ball Bearing.

HOG
1—Mitts & Merrill Hog. Number 5Z52.

JORDANS
2—E. D. Jones Ma;estic Jordans, with one new set of fillings for both plugs and shell—belt driven.
2—#2 Miami Jordans—motor driven.
1—Noble & Wood Pony—belt driven.

MISCELLANEOUS
2—Nugent Oil Filters (new).
1 Shartle Brothers cast iron Riffler or Settling Trough. 72' long, 6'7" wide.

MOTORS
1—Westinghouse 200 h.p.—285 r.p.m.—440 volts—3 phase—60 cycle.

PLATERS
2—Holyoke 2 Roll 18" dia. 36" face.

PULLEYS
60—Cone Split and Solid Cast Iron Pulleys. Various Sizes.

PULP EQUIPMENT
1—Economy Electric Pulp Baler.
1—Carthage 4 pocket 27" grinder. Ball bearing equipment
1—126" face Kamyr Press.
1—84" Sumner Disc Barker with motor.

PULPERS
1—Sturtevant Bale Pulper with conveyor & motors used three years.
1—Voith Pulper 20 tons cap.

PUMPS
4—Worthington Pumps 10,000 g.p.m.—35' head. Requires 75 h.p. at 550 r.p.m.
1—DeLaval 6" x 6".
1—DeLaval 1800 g.p.m. 30' Head. 500 r.p.m.—6" Suction—10" Discharge, Belt Bearing—Belt Driven—or for Direct Connection to Motor. Open Impeller.
1—Warren Open Impeller—5" Suction—18" Discharge—Ball Bearing—200 g.p.m., 265' Head—1750 r.p.m. for Direct Connection to Motor.
2—Warren Double Suction Ball Bearing, 6" Suction—14" Discharge—600 g.p.m., 250' Head—1150 r.p.m.
4—Pusey & Jones Open Impeller, 10" Stock Pumps, Belt Driven.
2—8" Pusey & Jones Open Impeller Stock Pumps, Belt Driven.
1—Worthington 400 g.p.m. 35' head 1750 r.p.m. Ball bearing.
1—15" Buffalo—4000 g.p.m.—70' head. For direct connection to motor.
2—New Domestic Pump Co. Ball bearing. 2100 g.p.m.—28' head—10" suction—8" discharge—open impeller. Base and coupling for direct connection to motor.
2—La Bour Company self priming ball bearing pumps. 2½" suction, 2½" discharge. 150 g.p.m.—30" head with extended base for motor.
1—Domestic Pump ball bearing—250 g.p.m., 4" suction, 3" discharge—30' head with extended base for motor.
1—Mario ball bearing pump—420 g.p.m.—100' head, 4½" suction, 3" discharge. With extended base for motor.
2—Domestic ball bearing pumps—240 g.p.m.—40' head—4" suction—4" discharge. With extended base for motor.
1—Domestic ball bearing pump—1400 g.p.m.—28' head—9" suction—8" discharge. With extended base for motor.
1—Midwest—1000 g.p.m.—180' head—6" suction—6" discharge for motor for pulley drive.

REELS
1—2-bowl 180" face 20" dia bowls
1—Black-Clawson 2 Bowl—120" face. Takes 60" diameter roll.

REFINERS
2—#1 Claflin Refiners. Bronze construction.

ROLLS
40—Table, Dress, Felt, Wire, Breast and Calender Rolls. Various Sizes.

ROTARY COOKER
1—Rotary Cooker—6' dia. x 21' long—complete with drive.

ROTARY DUSTERS
2—E. D. Jones Steel cage down draft dusters (wing type). 48" diameter—14'6" long.

ROTARY SCREENS
2—#2A Bird with copper vats.
2—#2 Bird with copper vats.
2—#1 Bird with steel vats, lead lined.
4—Moore & White.

RUBBER COUCH
1—82" face x 18" diameter.

RUBBER PRESS ROLLS
1—185" Face—26" Diameter } Used 20 Days
1—186" Face—27½" Diameter }
1—119" Face—19½" Diameter.
1—180" Face—17½" Diameter.
1—120" Face—19" Diameter.
1—118" Face—18" Diameter.
1—120" Face—18" Diameter.
1—107" Face—18" Diameter.
1—106" Face—18¼" Diameter.

SAVEALLS
1—A. D. Wood cylinder 48" dia. 60" face.
1—Dorr Company No. 40 ADKA Saveall 340-440 GPM. Used 1 month.

SCREW PRESS
1—Valley Iron Screw Press. Used 2 years.

SHEETERS
1—60" Beloit Single Knife heavy duty.

SHREDDERS
2—24" Sprout Waldron heavy duty shredders—anti friction bearing equipped.
1—Taylor Stiles Portable Pulp Shredder.

SLITTERS AND WINDERS
82" Warren two drum—fully rebuilt.
1—41" Waldron Slitter and rewinder. Roll embossing attachment.

SILL PLATE—CAST IRON
300 Ft. 12" wide 1" thick.

STUFF PUMPS
1—10" x 20" Shartle triplex.
1—12" x 20" Shartle triplex.
2—4" x 10" Shartle Duplex direct connected to 3 h.p. gear head motors.

SUPERCALENDER STACKS
1—7 roll Norwood 72" face: 4 paper and 3 iron rolls. 1 new spare paper roll.
1—7 roll Norwood 52" face: 3 paper and 4 iron rolls. 1 new spare paper roll.
1—9 roll Norwood 83" face. Bottom roll 24" diameter. Top roll 20" diameter.

TRIMMER
1—63" Seybold.

TURBINES
2—General Electric Turbine Paper Machine Drive 250 h.p.—350 r.p.m. 125 lb. steam pressure 30 lb back pressure.

UNWINDERS
1—42" John Waldron Unwinder. Used 1 year.

VACUUM PUMPS
1—14" x 29" Connersville.
1—#1 Nash—for direct connection to motor.

WASHERS (Beaters)
1—54" face—42" diam. with rigging. New.

WET MACHINES
1—78" Pusey & Jones Cylinder Mould. 78" face—36" diameter with rubber couch, 18" dia.

YANKEE DRYERS
2—Beloit 8' dia. x 175" face—75# working pressure.
1—Beloit 5' dia. x 194" face—75# working pressure.

THE ABOVE IS A PARTIAL LIST OF EQUIPMENT OFFERED FOR SALE.

AMERICA'S LARGEST BUYERS OF PAPER MAKING MACHINERY

We buy single items to complete Pulp and Paper Mills.

FOR SALE

FRANK H. DAVIS CO.,
ESTABLISHED 1889

USED AND REBUILT PAPER MACHINERY

FOR SALE

1—110" four drum Moore & White winder with slitter part, 15" diameter drums, winds 60" diameter roll, excellent condition.
6—12 plate Packer Screens.
2—Forced draft Buffalo fans, size 6½.
2—2800 lb. iron tub broke beaters.

PULPERS

1—E. D. Jones Pulper, No. 21, direct connected through Falk reducer to 50 HP induction motor, type K., G.E. magnetic reversing switch and push button station.

1—Jones Pulper, No. 33, one speed reducer, 40 HP induction motor, reversing switch and push button station.
Both pulpers new in 1938.

SHREDDERS

3—Mitts Merrill No. 15 CF right hand pulp shredders, 36" dia. cylinders, removable shell type bearings, coupled motor drive. One is equipped with 125 HP variable speed motor and controls; one is equipped with motor without the control and one shredder is without motor or control.

KNIFE GRINDER

1—90" Covel and Hanchett knife grinder, size 90 D, purchased new in 1938.

LIFT TRUCK

1—Lewis Shepard Lift Truck, type NHF, model ST, capacity 3500 lbs. Lift 5". Platform 48" x 42". Low 5", high 5". New 1937.

CONVEYOR

1—Alvey Horizontal Carton Conveyor, 98 ft. centers, two strand 3 pitch roller chain, 2½ x 2¼ x 20 maple flights, 3" on centers.

Builders of

ASPHALT COATING, COMBINING MACHINE, GUMMING AND CREPING MACHINE, ROLL GRINDER

FRANK H. DAVIS COMPANY
175 Richdale Ave., Cambridge, Mass.

PAPER MILL EQUIPMENT
For Sale

68" Rice, Barton & Fales Slitter-Rewinder, for use on dry end of paper making machine.
80" Finley mill type Sheeter.
34" Inman shear cut Slitter.
38" White Auto. Power Cutter.
54" Brown & Carver Power Cutter.
14 x 22 John Thomson Presses.
BALING MACHINES—NEW—Both Hand and Power.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18

FOR SALE

New and guaranteed used steel pipe and boiler tubing suitable for paper cores and all other purposes. Also, valves, fittings, wood and steel tanks and steel buildings.

JOS. GREENSPON'S SON PIPE CORP.
NAT'L. STOCK YARDS,
ST. CLAIR CO., ILL.
JL-25

FOR SALE—6 New Unused Natural Stones for Carthage 3 Pocket Grinder. 32" face, 56" diameter, 2X Grade. Fort Howard Paper Company, Green Bay, Wisconsin. J-18

FOR SALE

REVAMPING AND REBUILDING MILL AND CAN OFFER FOR SALE

1—Noble & Wood Mammoth Jr. Jordan ¼" Filling. Now operating.
1—4000# Capacity motor driven freight elevator with automatic stop control—can be inspected in operation at our plant.
1—6" Lawrence Centrifugal Water pump.
1—Buffalo Centrifugal Stock Pump—8".
2—8" Barnes Centrifugal Sewage Pumps.
8—100" Screen plates for No. 2-A Bird Screen. Slots, .022—never used after being recut once.
1—Rubber covered press roll 12" diameter by 68" face—Journals 5" diameter by 7¼" long.
1—Rubber covered press roll 12" diameter by 84¼" face—Journals 5" diameter by 7¼" long.
1—20" face cast iron tapered pulley—2-15/16" Bore, Taper 31"—29½".
2—20" face cast iron tapered pulley—3-7/16 Bore, Taper 31"—30".
1—24" face cast iron tapered pulley—3-7/16" Bore, Taper 31⅝"—29⅝".
2—Steel split pulleys 60" diameter by 31" face —5-15/16" bore.
1—Cast iron split pulley—60" diameter by 21" face by 3½ bore.
1—Cast iron split pulley—40½" diameter by 21" face by 3½ bore.
1—Cast iron split pulley—84" diameter by 36" face by 5-15/16" bore.
1—Solid cast iron split pulley—72" diameter by 16" face by 16" face by 8⅝" bore.
2—Steel split pulleys—60" diameter by 31" face by 5-15/16" bore.
1—Paper pulley—24" diameter by 21" face by 4½" bore.
1—Tapered cast iron split pulley. Taper 30" to 28½" by 20" face by 3-15/16" bore.
1—30" x 90" Cylinder Mould—7" diameter shaft inside cylinder.
1—9½" Diameter x 85" Face Rubber—covered squeeze or wringer roll—Journals 1-15/16" diameter.
1—9" Diameter x 88" Face Calender roll—5" diameter journals.
12—6½" Dia. x 92" face steel dryer felt rolls with 1-7/16" x 6½" Journals.
2—4" Gould centrifugal stock pumps with 2 vane open impeller. Capacity 600 G.P.M. at 40' head—1175 R.P.M. with 10 H.P. Operated less than two years.
2—Pair Noble & Wood lighter stands complete with lighter beams and bearings for 8" diameter journal beater roll.

A visit to the mill would prove profitable as we have many items for sale too numerous to mention. See our superintendent, Mr. O. P. Fussell at our plant in Walloomsac, New York.

WALLOOMSAC PAPER MILLS, INC.
MILLS: Walloomsac, New York
MAIN OFFICE: 25 Vanderbilt Avenue
New York 17, N. Y. TF

MACHINERY FOR SALE

COATER
1—27" paper coating machine (experimental) 11" dia. x 27" coating cylinder, 20 x 3" pulley drive.

DIE CUTTER
1—power die cutter 19 x 42" head, geared drive.
8' 2¾" single leather belting .45 perforated metal belt guard.

AMERICAN LAUNDRY EXTRACTOR
1—20" under driven extractor. 26' 3" double leather belting 1.08. 1 dip truck and basket.

DRYING OVEN
1—cellulose paper drying oven 5 x 11 x 7' high galv. iron, 2 pair hinged doors, galv. iron vent pipe, 1 Modine heating unit, complete, including 2 sprinkler heads, steam pipe.
Address Box 46-310 care Paper Trade Journal. TF

FOR SALE

BREAKER BEATER

Dilts Bandless Roll 62" diameter x 54" face—70 tons daily capacity. Equipped with Shartle Bros. Ragger.

J. J. ROSS COMPANY
250 Frelinghuysen Ave., Newark 5, N. J.
Tel. Bigelow 3-3720 J-11

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"CALL MOORHEAD
IN PITTSBURGH
REBUILT ELECTRIC EQUIPMENT"

REBUILT ELECTRICAL MACHINERY
Slip ring & Squirrel cage motors

HP	Make	Speed	Voltage	Type
20(2)	G.E.	720	220/440	K444
40	G.E.	870	220/440	MTC
40(2)	G.E.	600	220/440	M T
50	G.E.	600	220/440	H113A
60(4)	G.E.	600	220/440	K556
75	G.E.	600	220/440	K556
75	G.E.	720	220/440	K556
100	G.E.	1200	220/440	KF
100	West.	1750	2200/220/440	CI
150	West.	600	440/220	Syn.
200	G.E.	600	220/440	I M
200	West.	600	220/440	Syn.
200	G.E.	240	2200	MT412
300	G.E.	700	220/440	M
300	West.	1750	2200/220/440	CW
350	G.E.	900	440	I-M
350	Al.Ch.	720	440	S.R.
500	G.E.	450	2200	MT412

AC and DC Generating Equipment

1—300 KW G.E. R. Converter 250 v. DC.
50 KW G.E. 125 v.—75 HP 3 ph.
150 KW Cr. Wh. 250/275 v. 550 RPM.
1000 amp. Westgh. SK Arc Weld Gen.
75 KW 250/275 v. West. Type S 1000.
75 KW Western Elec. 250 v. 2200 v. 900 RPM.
45 KW West. SK 125 v. 700 RPM.
50 KW Westgh. Turbo 125 Volt D.C.
50 KW Westgh. Engine unit 125 v. D.C.
35 KW G.E. 250 v.—50 HP G.E. 220/440 v.

Miscellaneous

1300 cu. ft. 100#. Worth. Belted, Comp.
164 cu. ft. Chic. Pneu. Steam Comp.
500/700 HP Morse Chain Drive 4.28 to 1.
250 HP Ottumwa Unit 12.5 to 1
150 HP G.E. unit ratio 3 to 1
150 HP Nuttall 1.6 to 1
2—50 HP Ohio Forge ratio 45 to 1.

MOORHEAD-REITMEYER CO., INC.
30th & Brereton Sts. Pittsburgh, Pa.

Specialising in rebuilt Electrical Machinery for over a Quarter of a Century.

FOR SALE

1—92" single cylinder Paper Machine—including 6 dryers, 48" diameter Beloit enclosed Hypoid Drive—wet end—reel—winder—48" diameter creping dryer.

J. J. ROSS COMPANY
250 Frelinghuysen Ave., Newark, 5, N. J.
Tel. Bigelow 3-3720
J-11

FOR SALE — COMPLETE 62" BELOIT LAMINATOR. WILL PASTE UP TO 4 PLYS BOARD FROM ROLLS PRODUCING SHEETS ALL LENGTHS, WITH SLITTERS, MOTOR, REEVES DRIVE, ETC. ADDRESS BOX 46-395 care Paper Trade Journal. J-18

FOR SALE—1 Hamilton-Corliss Variable Speed Twin Engine, size of cylinders 12" x 24". Also Triple-Deck Frames for ninety 36" dryers, any width. The Chesapeake Paperboard Co., Baltimore 30, Md. TF

FOR SALE | **FOR SALE** | **FOR SALE**

TARENTUM PRODUCTS CORP.

TARENTUM, PENNSYLVANIA

1—Majestic Jordan #A-235, complete with new tilling, 3/16" tackle, No. 6 Fast Jordan Coupling, and following drive:
1 Westinghouse Induction Motor type CS 375 HP 2300 V 3 ph 60 cy 97 amp. 380 RPM Ser. #1463196, complete with one control panel, including one Westinghouse 300 amp. Oil Circuit Panel.
1 set Disconnect Switches.

1—Westinghouse DC Motor 75 HP 230 V 265 Amp 575 RPM Frame 183 Serial #4778560. Complete with starting control, circuit breaker and meter.

1—Elliott Water Pump, capacity 500 gallons per minute. Serial #37075. Direct connected to one G.E. Motor 25 HP DC Type CD 85-230 91.3 amps 1750 RPM Ser. #1530365. Complete with one starting control and switch.

1—Westinghouse Generator 70 KW 250 V DC 280 amp. 375 RPM Ser. #343451, with one Field Rheostat, one two-pole circuit breaker 600 amp., one Westinghouse 500 amp. ameter and shunt. This Generator driven by Buckeye Steam Engine, 100 lbs. steam pressure engine #5156.

1—2000 KW A.C. Turbine Generator complete with all accessories.

1—Allis-Chalmers Induction Motor 250 HP 870 RPM 2200 V 3 ph 60 cy 59 amp Serial #2K13565.1.

1—G.E. Induction Motor type KT 326-6-25-1200 Form B 3 ph 60 cy 220 V 25 HP 61 amp. 1200 RPM Ser. #1053934 complete with one G.E. Oil Switch Type F Form K20 80 amp. 600 V Ser. #368400.

1—G.E. Starting Compensator CR 1034 220 V 3 ph 60 cy Type NR 1622.

1—G.E. Induction Motor (slipring) Frame 15A 150 HP Form M 720 RPM 2200 V 3 ph 60 cy 36 amp. Ser. #1180132.

1—G.E. Induction Motor (slipring) Frame 15A 150 HP Form M 720 RPM 2200 V 3 ph 60 cy 36 amp.

1—Westinghouse 30 HP D.C. Motor 220 V 117 amp. 975 RPM Ser. #233501.

1—G.E. Motor DC Type MP Form N 20 HP 1025 RPM 220 V 70 amp. Ser. #19580, complete with manual starting equipment.

1—164" Sheet Cutter complete with stands for 10 rolls and layboy.

1—G.E. Motor DC Type RC30 Form A 15 HP 850 RPM 230 V 53.5 amp. Ser. #957750, complete with variable speed control for armature and field.

1—G.E. Motor DC 7.5 HP 230 V 30.2 amp. 850 RPM Type RC-29A Form A29 Ser. #1145541.

1—G.E. Motor DC 10 HP 230 V 375.1 amp. 850 RPM Type RC 29 Form A29 Ser. #1148660.

1—Westinghouse DC Motor type S 5 HP 220 V 21 amp. 1300 RPM Ser. #112692.

1—G.E. Motor DC 35 HP 129 amp 230 V 700 RPM DLC 202 Form A Compound Ser. #434542, complete with starting control.

1—G.E. Induction Motor (slipring) Type IE 13AA-4-150-1800 Form M 3 ph 60 cy 2200 V 150 HP 34.5 amp 1745 RPM Ser. #3884576 complete with panel. One G.E. Switch Panel Type ATI 58008, one Drum Controller and Resistance, variable speed.

1—Allis-Chalmers DC Motor 10 HP 220 V 500 RPM #38637.

1—Commercial DC Motor 10 HP 230 V 40 amp 730 RPM Ser. #3609, complete with variable control.

1—Master Electric Worthington Pump and Motor. Pump is good for 100 gal. per minute 5 HP motor 230 V DC 3425 RPM Ser. #CC-3495.

1—Robbins & Myers Hoist ½ HP 230 V DC 400 RPM Ser. #M71300KH.

1—Master Electric Gear Head Motor 1 HP 230 V DC 1725 RPM Ser. #CE863.

1—Shepard Liftabout Electric Hoist 2,000 lb. capacity 230 V DC Ser. #11339.

1—Wright Electric Hoist 1,000 lb. capacity 230 V DC 1200 RPM Ser. #27668.

3—ILG Ventilating Fans ¼ HP 230 V DC 855 RPM.

2—G.E. CP 27 Compressor Head Air Pumps 230 V DC Complete with pressure line switches.

1—Allis-Chalmers DC Motor 5 HP 220 V 1050 RPM Ser. #44037.

1—Westinghouse DC Motor 10 HP 40 amp 230 V 1725 RPM Frame 60L Ser. #143833.

1—G.E. Motor DC Type C-27-B Form A112 10 HP 37.5 amp 230 V 1750 RPM Ser. #1454993, complete with control.

1—Cameron #10A Rewinder #36836, trim 44".

1—Cameron #10 Rewinder #39272, trim 64".

1—Daniels Rag Cutter #2.

1—Horizontal Rotary Digester 7' dia. 22' long, with gearing reduction.

1—Horizontal Rotary Digester 8' dia., 29' long, with gearing reduction.

1—Bucket type conveyor elevator. Buckets size 5" x 17", approximately 48' long, lifts on incline approx. 15'. All steel construction with Rex Chain Drive, complete with one Foote Bros. gear reducer type 28W, 43 to 1, Ser. #183052, driven by one G.E. DC Motor type RC27A Form A-38 5 HP 19.1 amp. 230 V 1150 RPM.

1—R40 Reducer, 12 to 1 ratio.

1—Stat Conveyor steel construction 4' wide, 3' high, 42" long, driven by one Jones Spur Gear Reducer, ratio 27 to 1. Ser. #10135. Driven by one Sprag electric DC Motor type LC 10 HP 37.2 amps 230 V 100 RPM Ser. #DL 2005213, complete with sheaves and V-Belt drive, one Westinghouse Automatic Starter.

1—John Waldron Corrugator #711.

1—Thorpe Hydraulic Press complete with 4 steam platen plates 40" x 40", and one Equalizer Pump.

1—Four cylinder Holyoke Duster.

1—Two-color rotary printing press, with various plates and printing rolls. Will handle 39" wide rolls of paper.

1—Heavy Duty Smith & Winchester Tuber #3369, with tuber attachments No. 4052 and No. 4895.

1—Frank A. Jones Tuber No. 1809.

1—Smith & Winchester Bottomer No. 1818, size 1/16 bbl.

1—Smith & Winchester Bottomer No. 3525, size ¼ bbl.

1—Smith & Winchester Bottomer No. 4018, size ½ bbl.

1—Smith & Winchester Valver No. 2245, size ¼ bbl.

1—Printing Press, Cottrell Flat Bed No. 9645, one color.

1—Printing Press, Cottrell Flat Bed No. 9643, one color.

1—Printing Press, Cottrell Rotary, two color. J-25

FOR SALE

New brass covered felt or wire rolls 6⅝" dia., 84 to 120" face. These are made from government surplus and are new in all respects.

Osborne Paper Mill Equipment Co.
Fulton, N. Y. TF

FOR SALE

1—8 x 10 Connersville vacuum pump, just removed from 5 flat boxes on news machine.

1—2 L Connersville vacuum pump, just removed from suction box first felt, on same machine as above.
Both pumps in good condition.

FRANK P. LYDEN, FORT EDWARD, N. Y. J-11

PAPER COATING MACHINERY — Waxing, Oiling, Gumming, Gluing, Carbon, Laboratory Coating and Treating Machines. High speed. New improvement. MAYER MACHINE COMPANY, Inc., 1155 Scottsville Road, Rochester, 11, N. Y. TF

FOR SALE—Beloit 116" Slitter—3 top slitter brackets no blades—3 bottom slitters complete. Thomas Paper Stock Company, 860 West Evergreen Ave., Chicago, 22, Illinois. TF

FOR SALE—3 Double Head D-2 Bliss Assembly Stitchers. 3—33" Model RFA Bliss Power Lift Top Stitchers. Equipped with 3 phase, 60 cycle, 440 volt, AC motors. This equipment is in excellent condition. Fort Howard Paper Company, Green Bay, Wisconsin. J-18

FOR SALE—Moore & White Style K.T. Duplex Cutter with one Revolving Duplex Slitter having 94" length of knives and three each top and bottom Slitters on each of two slitter shafts and with a two reel unwinding backstand. Ready for immediate shipment. Theo. Adams, 111 West Washington St., Chicago, 2, Ill. A-29

FOR SALE

FOR SALE—52" Hamblet Sheeter—no slitters or back-stand or layboy. Address Box 46-465 care Paper Trade Journal. J-18

WANTED

WANTED

1—156" Hamblet cutter, duplex, extra heavy, with layboy

Box No. 46-446 care Paper Trade Journal. J-11

WANTED

25 to 50 dryers about 100" face

Box No. 46-450 care Paper Trade Journal. J-11

WANTED—Smithe S. O. Seed Pocket Machine. Please give full particulars, price and submit few samples of seed pockets produced on machine offered. Address Box 46-463 care Paper Trade Journal. J-11

WANTED—Straight pass enclosed drier to handle paper coating process. Also paper coating equipment. The Process Manufacturing Company, 1313 West Randolph Street, Chicago, 7, Illinois. TF

WANTED

WANTED — DISCARDED PAPER MILL FELTS. HIGHEST PRICES paid for all kinds of discarded paper mill felts. LARGE or SMALL QUANTITIES accepted. Prices quoted immediately on receipt of samples. ADDRESS: GLASER AND YOFFE, INC., 80 NORTH MAIN ST., NATICK, MASS. TF

WANTED—Four room apartment—Cleveland or vicinity. Address Box 46-298 care Paper Trade Journal. TF

WANTED—W & P Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic Presses, Sheridan Presses, Dryers. Address Box 46-32 care Paper Trade Journal. TF

WANTED—Twelve or more dryers, size to be 96" face. 104" shoulder to shoulder of journal. 42" dia. Address Weaver-Wall Company, Avery, Ohio. J-25

WANTED—Brightwood Box Machine. Address Box 46-33 care Paper Trade Journal. TF

WANTED—Old Evaporator Tubes 1", 1¼" and 2" O. D. Why sell them for junk? Write us if you have any. Also when you get ready to change over. S. Bender, P. O. Box 271, Shreveport, La. A-8

WANTED—Used Single Face Corrugator 36", 50" or 60" Wide B Flute. State size of rolls, make, price, condition and delivery. Address Box 46-415 care Paper Trade Journal. J-11

USED EQUIPMENT WANTED — Urgently need one green, Schopper or Williams Freeness tester. Reply giving age, condition and price. Address Box 46-447 care Paper Trade Journal. J-11

REQUIRE one extension pile delivery Miehle #1, #2, #2/0, #3 either one. Universal Folding Box Co., Inc., Hoboken, N. J. J-25

WANTED

TOILET WINDER wanted for experimental use. Perforator and slitter not necessary. Any condition or age. Hunter and Company, 1550 East 17th St., Cleveland 14, Ohio. J-18

WANTED—Napkin, towel, toilet, or shelf paper, etc. converting machinery. Address P. O. Box 158, Gardner, Mass. J-18

WANTED—80" Two-drum Rewinder. Address Box 46-464 care Paper Trade Journal. J-18

SALES AGENCY

Paper Manufacturers Agents, covering all of Egypt, with an experience of 20 years in the paper trade, desire to contact American manufacturers of papers and boards, interested to appoint agents in Egypt. Write: Paper Agents, P. O. B. 1297 Cairo (Egypt). A-1

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We are willing to

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BLOOMFIELD, IND.

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AMYLIQ

the modern means for preparing coatings and tub-sizings from starch.

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SONOCO PAPER MILL CORES

RETURNABLE
DURO —our standard returnable paper mill core of plus-standard quality.
EN-DURO —a super-quality core to meet demands for extra strength and service.

NON-RETURNABLE
RHINO —an extremely tough and strong core with a low cost that meets the market for a standard product giving superior service.

SONOCO PRODUCTS COMPANY
BRANTFORD, ONT. DARWOOD, N. A. HARTSVILLE, S. C. ROCKINGHAM, N. C. MYSTIC, CONN. LOWELL, MASS.

SONOCO PAPER CARRIERS

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29 Broadway
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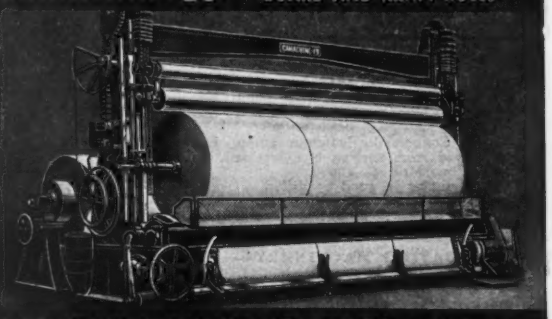
AMORPHOUS WAXES
Melting Points 120° F. to 205° F.

For the Manufacture of

LAMINATING PAPER . . GLASSINES . . WATER-PROOFING . . GREASE PROOFING . . EXTENDERS FOR PARAFFIN, FOOD CONTAINERS, CONTAINER LININGS, ADHESIVENESS AND PROTECTIVE COATING.

CAMACHINE 19 A FAST WINDER FOR NEWSPRINT, BOARD AND KRAFT ROLLS



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MIXED-FLOW PUMPS
DE LAVAL-IMO OIL PUMPS

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TRENTON 2, NEW JERSEY

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Asten-Hill, Ltd.
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Compact—Accurate—Sturdy
Completely equipped
THOMAS W. HALL COMPANY, Inc.
Agents
120 West 42nd Street, New York 18, N. Y.
Plant at Stamford, Conn.

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Manhattan Rubber Division

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Flintkote Company
Monsanto Chemical Co.
National Adhesives Division of National Starch Products, Inc.
Philadelphia Quartz Co.
Stein, Hall & Co., Inc.
United States Rubber Co.

AGITATORS
Appleton Machine Co.
Biggs Boiler Works Co.
Dilts Machine Works, Inc.
Dorr Company
Downingtown Mfg. Co.
Hardinge Co., Inc.
Improved Paper Machy. Corp.
E. D. Jones & Sons Co.
D. J. Murray Mfg. Co.
Montague Machine Co.
Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Valley Iron Works Co.

AIR CONDITIONING
Steamaire Company

ATOMIZERS
Steamaire Company

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Thomas W. Hall Co., Inc.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Weber, Herman G.

BALING MACHINES
Thomas W. Hall Co.

BARKERS AND CHIPPERS
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Carthage Machine Co.
Fibre Making Processes, Inc.
D. J. Murray Mfg. Co.
Valley Iron Works Co.

BARS
Dilts Machine Works, Inc.
E. D. Jones & Sons Co.
The Moore & White Co.
Noble & Wood Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BEARINGS
Black-Clawson Company
Jones, E. D., & Sons Co.
Magnus Metal Corp.
Montague Machine Works
Raybestos-Manhattan Inc.
Manhattan Rubber Division
Rollway Bearing Co.
Shartle Brothers Machine Co.
SKF Industries, Inc.
Timken Roller Bearing Co.
Valley Iron Works Co.
T. B. Woods' Sons Company

BEATERS & JORDANS
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Black-Clawson Company
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Hermann Mfg. Co.
E. D. Jones & Sons Co.
Noble & Wood Machine Co.
J. J. Ross Company
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works

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Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Noble & Wood Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

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Allis-Chalmers Mfg. Co.
The Cincinnati Rubber Mfg. Co.
Raybestos-Manhattan Inc.
Manhattan Rubber Division
J. E. Rhoads & Sons
United States Rubber Co.
T. B. Wood's Sons Company
Worthington Pump & Machy. Corp.

BLEACHING BOILERS, ROTARY
The Biggs Boiler Wks. Co.

BLEACHING APPARATUS
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Improved Paper Machy. Corp.
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Perkins & Sons, Inc., B. F.
Moore & White Co.
Niagara Alkali Co.
Noble & Wood Machine Co.
Pennsylvania Salt Co.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.

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Carthage Machine Co.
Montague Machine Co.
Moore & White Co.
Murray Mfg. Co., D. J.
Walworth Company

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BOILERS (Electric)
Steamaire Company

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Kalamazoo Tank & Silo Co.
Valley Iron Works Co.

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Farrel-Birmingham Co., Inc.
Lobdell Car Wheel Co.
Moore & White Co.
Perkins & Son, Inc., B. F.
J. J. Ross Company
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works
Waldron Corp., John

CASEIN
Packing Products Co.

CASTINGS
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Black-Clawson Company
Carthage Machine Co.
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Grinnell Company
Hamblet Machine Co.
Hardinge Co., Inc.
E. D. Jones & Sons Co.
Lobdell Car Wheel Co.
Magnus Metal Corp.
Montague Machine Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Union Machine Company
Union Screen Plate Co.
Valley Iron Works Co.

WHERE TO BUY

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De Laval Steam Turbine Co.
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Ross, J. O., Eng. Co.
Shartle Brothers Machine Co.

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Amer. Resinous Chemicals Corp.
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Diamond Alkali Co.
Dispersion Process, Inc.
Dow Chemical Company
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Falls Chemical Products Co.
General Dyestuff Corp.
Geigy Co., Inc.
Gottesman & Co.
Hooker Electrochemical Company
Mallinckrodt Chemical Wks.
The Mathieson Alkali Works, Inc.
Monsanto Chemical Company
National Oil Products Co.
Naugatuck Chemical Div. of U. S. Rubber Co.
Niagara Alkali Company
Paper Makers Chemical Department, Hercules Powder Co.
Pennsylvania Salt Mfg. Co.
Philadelphia Quartz Co.
Pioneer Salt Company
Pittsburgh Plate Glass Co., Columbia Chemical Division
Solvay Sales Corp.
Stauffer Chemical Company
United States Rubber Co.
Witco Chemical Co.
Wyandotte Chemicals Corp.

CHEMISTS (Consulting)
Harold R. Murdock

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Paper Makers Chemical Department, Hercules Powder Co.
Magnus Chemical Co.
Monsanto Chemical Co
Nichols Engrg. & Research Corp.
Oakite Products, Inc.
Pennsylvania Salt Mfg. Co.
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Pittsburgh Plate Glass Co., Columbia Chemical Division
Solvay Sales Corp.
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Hardinge Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Wks.
Stearns Magnetic Mfg. Co.
T. B. Wood's Sons Company

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Potdevin Machine Co.
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Cochrane Corp.

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Cochrane Corp.
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Ross Engineering Corp., J. O.

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Shartle Brothers Machine Co.
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Hardinge Co., Inc.
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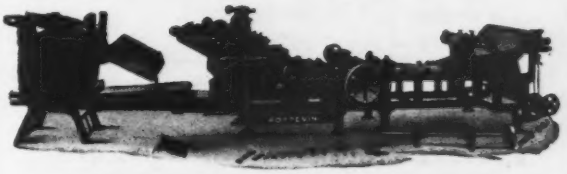

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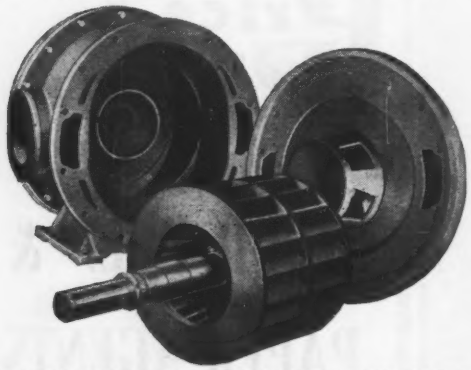

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Paper Makers Chemical Department. Hercules Powder Co.
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Witco Chemical Co.

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Wallace & Tiernan

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Shartle Brothers Machine Co.
Waldron Corp., John

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American Colloid Co.
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Amer. Resinous Chemicals Corp.
Johns-Manville Sales Corp.
W. H. Loomis Talc Corp.
Vanderbilt Co., R. T.
Witco Chemical Co.

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Hardinge Co., Inc.
Moore & White Co.
J. O. Ross Engrg. Corp.
Witco Chemical Co.
Worthington Pump & Machy. Corp.

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Klemp Co., W. F.
Norton Co.
Raybestos-Manhattan Inc.
Manhattan Rubber Division
United States Rubber Co.

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Oliver United Filters
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
South Wabash Engrg. Co.

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FREENESS TESTERS
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Downingtown Mfg. Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Lobdell Car Wheel Co.
Montague Machine Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Wks.

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Norton Company
United States Rubber Co.

HEATING, VENTILATING AND AIR CONDITIONING
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Armstrong Machine Works
Cochrane Corp.
E. D. Jones & Sons Co.
General Electric Co.
Grinnell Company
Leeds & Northrup
D. J. Murray Mfg. Co.
Noble & Wood Machine Co.
Ross Engineering Corp., J. O.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Worthington Pump & Machy. Corp.

HOISTS
Appleton Machine Co.
Dilts Machine Works
Rodney Hunt Machine Co.
Ingersoll-Rand Co.
E. D. Jones & Sons Co.
Reading Chain & Block Corp.

HOSE (Air, Water, Suction, etc.)
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Raybestos-Manhattan Inc.
Manhattan Rubber Division
United States Rubber Co.

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Leeds & Northrup Company
National Technical Laboratories
E. F. Perkins & Son
Taber Instrument Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Wallace & Tiernan Instrument Co.

INSULATION
Johns-Manville Sales Corp.

JOINTS
Perfecting Service Company

JORDAN FILLINGS
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E. D. Jones & Sons Co.
Noble & Wood Machine Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
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Dilts Machine Works, Inc.
Hamblet Machine Co.
E. D. Jones & Sons Co.
Valley Iron Works Co.

KNOTTERS
Fibre Making Processes, Inc.

LABORATORY EQUIPMENT
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Bauer Brothers Co.
The Biggs Boiler Works Co.
W. H. & L. D. Betz
Dilts Machine Works
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Noble & Wood Machine Co.
Taber Instrument Co.
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works

LAY BOYS
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Moore & White Co.
Shartle Brothers

LINTER COTTON
The Railway Supply & Mfg. Co.

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Gulf Oil Corporation
Gulf Refining Co.
Sinclair Refining Co.
Socony-Vacuum Oil Co., Inc.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

LUBRICATORS
Hills-McCanna Co.

MATERIAL HANDLING
Northwest Engrg. Co.
Reading Chain & Block Company

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Car Wheel Co.
Testing Machines, Inc.
Walker-Goulard-Plehn Co.

MOISTENING EQUIPMENT
The Spray Engineering Co.
Steamaire Company

MOISTURE CONTENT CONTROL
Steamaire Company

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Continental Electric Co.
De Laval Steam Turbine Co.
General Electric Co.
Ingersoll-Rand Co.
Reliance Electric & Engrg. Co.
Westinghouse Electric Corporation

NOZZLES
Steamaire Company

PACKING BOXES
Johnson Corporation
Shartle Brothers Machine Co.

PACKING
Johns-Manville Sales Corp.
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc.
United States Rubber Co.

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Black-Clawson Company
Downingtown Mfg. Co.
Thomas W. Hall Co.
Moore & White Co.
Pusey & Jones
J. J. Ross Company
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

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Black-Clawson Company
E. D. Jones & Sons Co.
Montague Machine Co.
The Sandy Hill Iron & Brass Wks.
Valley Iron Works Co.

PAPER MILL BUILDERS
Merritt-Chapman & Scott Corp.
The Rust Engrg. Co.

PAPER TUBE MACHINERY
Theo. Adams
Dietz Machine Works
Thomas W. Hall Co.
Hudson Sharp Machine Company
Langston Co., Samuel M.
South Wabash Engrg. Co.

PASTING MACHINES
Black-Clawson Company
Davis, Frank H., Co.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
South Wabash Engrg. Co.
Waldron Corp., John

PENSTOCKS, WELDED STEEL
The Biggs Boiler Works Co.

PERFORATED METAL
Allis-Chalmers Mfg. Co.
Harrington & King Perforating Co.
Hendrick Mfg. Co.

PIPE
Black-Clawson Company
Crane Company
Deublin Company
Grinnell Company
Johns-Manville Sales Corp.
Shartle Brothers Machine Co.
Stowe-Woodward, Inc.
Taylor Forge & Pipe Works
Walworth Company

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Shartle Brothers Machine Co.
Timken Roller Bearing Co.

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The Noble & Wood Machine Co.
Shartle Brothers Machine Co.

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Dietz Machine Works
Farrel-Birmingham Co.
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Thomas W. Hall Co.
Hudson-Sharp Machine Co.
Paper Converting Machine Co., Inc.
Potdevin Machine Co.
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Shartle Brothers
South Wabash Engrg. Co.
Valley Iron Works Co.
Waldron Corp., John
Weber, Herman G.

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PULPS
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Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Elof Hansson, Inc.
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The Union *Channel-Back Plate uses a new design to provide free screening. Cleaning labor is reduced to a surprising degree. A trial lot in one vat will tell the story. Write for quotation.**

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FITCHBURG, MASS.

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Fig. 45 — Biggs 14 ft. dia. welded rotary digester with worm-and-segment drive.

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MODEL 28

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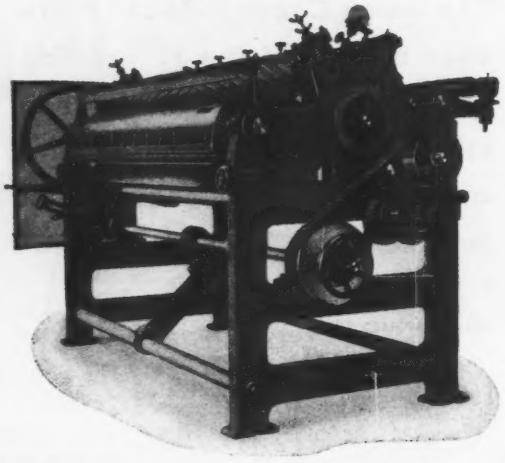

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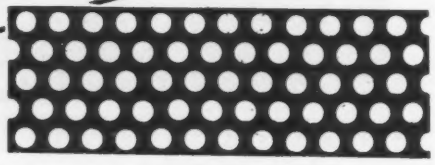

Hendrick offers perforated sheet metal screens, made in stainless steel, Monel, bronze and copper, with round holes in a range of sizes increasing by increments of .005", from .04" to .125" in diameter.

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Steamaire Company
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Taylor-Stiles & Co.

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Ross Engineering Corp., J. O.
Valley Iron Works Co.

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Weber, Herman G.

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Union Screen Plate Co.

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Shartle Brothers Machine Co.
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Rotogravure Engrg. Co.
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Weber, Herman G.
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Montague Machine Co.
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Moore & White Co.
Paper Converting Mch. Co.
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Pusey & Jones Corp.
Rotogravure Engrg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Wks
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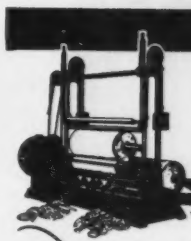
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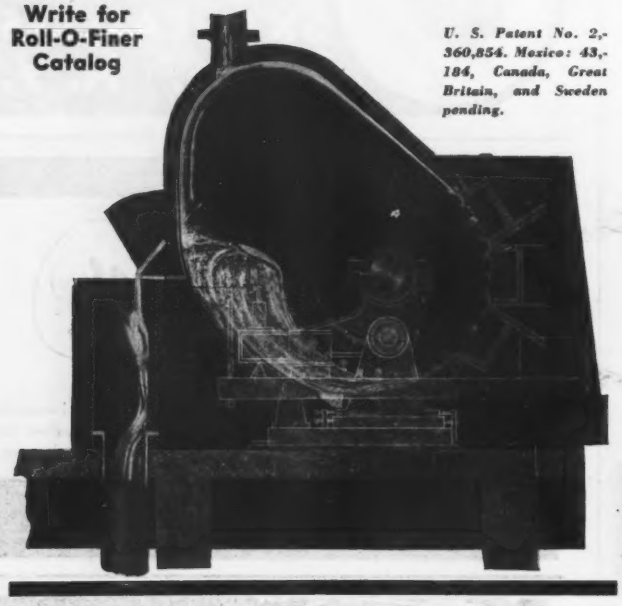

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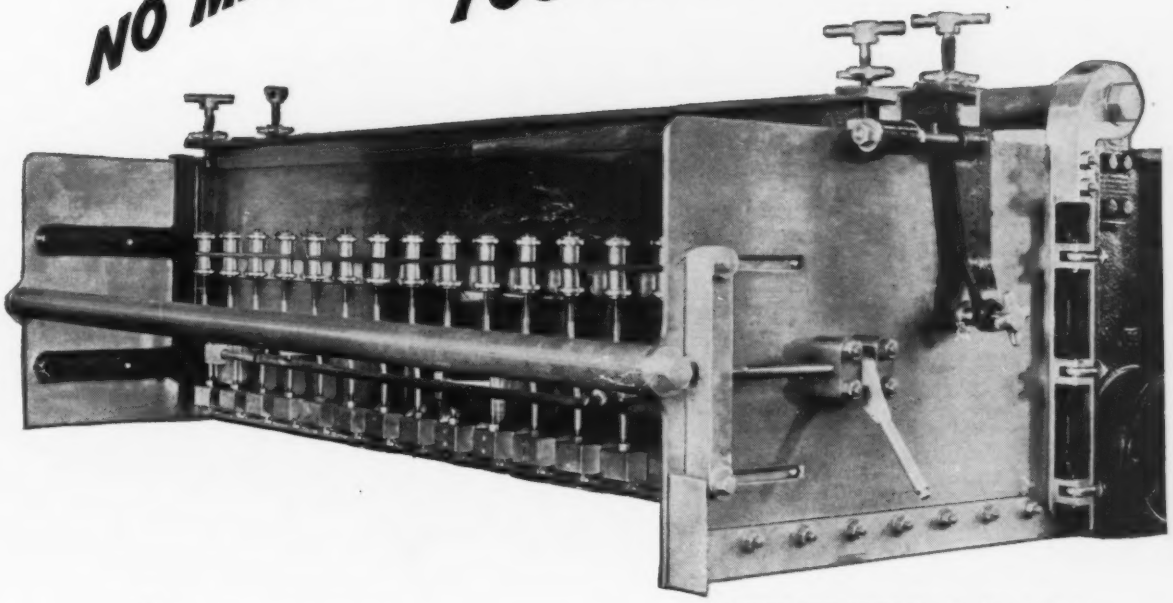

A DOUBLE ADJUSTABLE *Monel slice built by the Pusey & Jones Corporation, Wilmington, Del. It is designed to handle a wide range of papers at speeds up to 600 feet per minute.*

Judge your slice blades on two basic counts.

— Do they resist acid and alkaline stocks, and machine white waters?
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Readily fabricated and welded, Monel withstands attack by corrosive stocks and white waters, alum, dilute hydrochloric acid and dilute sulfuric acid.

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You'll find detailed information on further advantages of Monel in Technical Bulletin C-3, *Monel, Nickel and Inconel in Pulp and Paper Mills.* Ask us for your copy.

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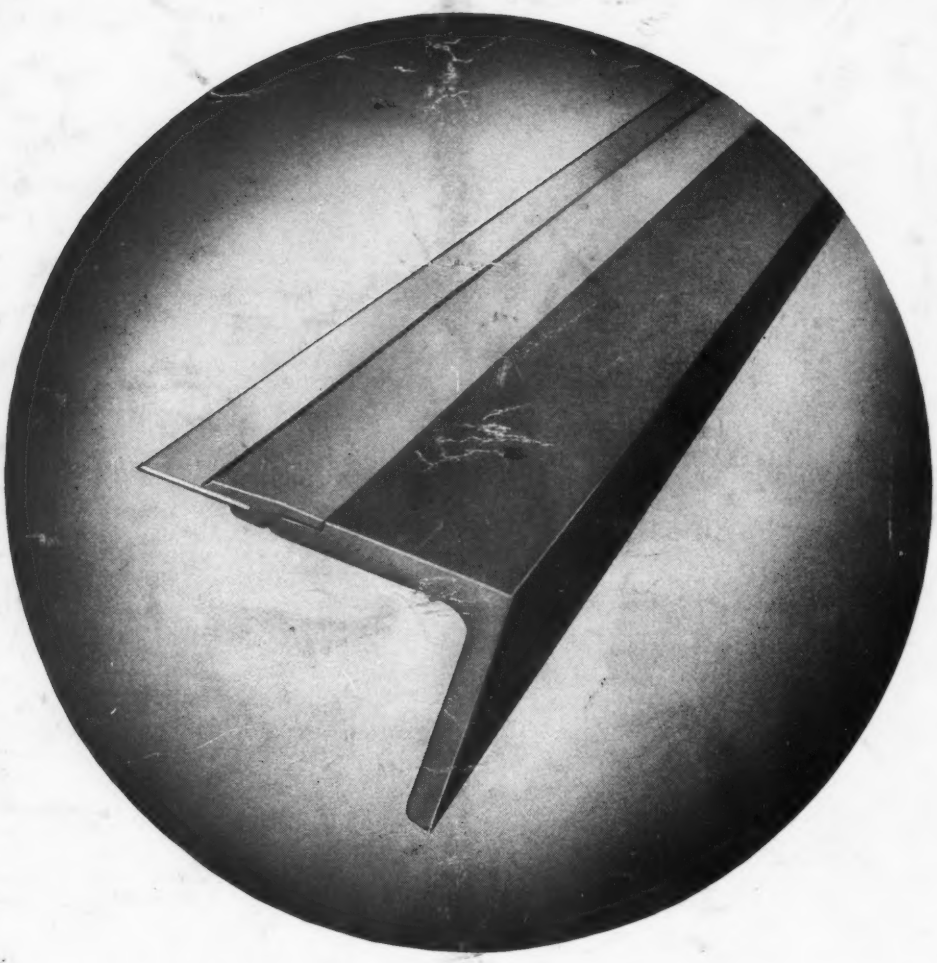
July 11, 1946



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